Order No. MTNC030518C1
B19 Canada: B02

# Service Manual

## HDTV MONITOR

## PT-53WX53G / PT-56WX53G / PT-47WX53G / PT-47WX33G / PT-47WXC43G / PT-4743G

P8

**Panasonic**®

**IMPORTANT SAFETY NOTICE**

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

# A - BOARD - TNP2AH045

### IC3002

| | | | |
|---|---|---|---|
| 1 | 0.00 | 41 | 4.43 |
| 2 | 4.30 | 42 | 0.00 |
| 3 | 4.30 | 43 | 4.22 |
| 4 | 0.00 | 44 | 4.24 |
| 5 | 4.56 | 45 | 0.00 |
| 6 | 0.00 | 46 | 4.20 |
| 7 | 4.57 | 47 | 8.83 |
| 8 | 4.63 | 48 | 0.00 |
| 9 | 4.57 | 49 | 0.00 |
| 10 | 0.43 | 50 | 4.58 |
| 11 | 4.39 | 51 | 4.62 |
| 12 | 4.39 | 52 | 4.58 |
| 13 | 0.00 | 53 | 0.42 |
| 14 | 4.57 | 54 | 4.39 |
| 15 | 0.00 | 55 | 4.40 |
| 16 | 4.58 | 56 | 0.00 |
| 17 | 4.63 | 57 | 4.58 |
| 18 | 0.00 | 58 | 0.00 |
| 19 | 0.43 | 59 | 4.56 |
| 20 | 4.40 | 60 | 4.62 |
| 21 | 4.39 | 61 | 4.56 |
| 22 | 0.00 | 62 | 0.43 |
| 23 | 4.43 | 63 | 0.00 |
| 24 | 4.43 | 64 | 4.40 |
| 25 | 0.00 | 65 | 0.00 |
| 26 | 4.46 | 66 | 4.54 |
| 27 | 4.20 | 67 | 4.54 |
| 28 | 0.00 | 68 | 4.58 |
| 29 | 0.00 | 69 | 0.00 |
| 30 | 4.47 | 70 | 0.00 |
| 31 | 8.83 | 71 | 4.40 |
| 32 | 4.43 | 72 | 0.00 |
| 33 | 4.43 | 73 | 0.00 |
| 34 | 0.00 | 74 | 4.57 |
| 35 | 0.00 | 75 | 0.00 |
| 36 | 0.00 | 76 | 4.55 |
| 37 | 0.00 | 77 | 0.00 |
| 38 | 4.30 | 78 | 0.00 |
| 39 | 4.40 | 79 | 4.40 |
| 40 | 4.42 | 80 | 0.00 |

### IC3001

| | | | |
|---|---|---|---|
| 1 | 3.91 | 33 | 4.30 |
| 2 | 4.40 | 34 | 4.30 |
| 3 | 3.90 | 35 | 0.00 |
| 4 | 4.43 | 36 | 0.00 |
| 5 | 4.40 | 37 | 4.31 |
| 6 | 0.13 | 38 | 4.45 |
| 7 | 4.80 | 39 | 4.18 |
| 8 | 3.91 | 40 | 4.45 |
| 9 | 4.43 | 41 | 4.45 |
| 10 | 3.90 | 42 | 8.90 |
| 11 | 4.43 | 43 | 4.38 |
| 12 | 4.39 | 44 | 0.00 |
| 13 | 0.00 | 45 | 4.88 |
| 14 | 4.78 | 46 | 0.00 |
| 15 | 3.90 | 47 | 0.00 |
| 16 | 4.40 | 48 | 0.00 |
| 17 | 3.90 | 49 | 4.88 |
| 18 | 4.40 | 50 | 4.44 |
| 19 | 4.38 | 51 | 4.38 |
| 20 | 0.00 | 52 | 4.45 |
| 21 | 4.90 | 53 | 4.42 |
| 22 | 3.91 | 54 | 4.45 |
| 23 | 4.43 | 55 | 3.65 |
| 24 | 3.91 | 56 | 4.18 |
| 25 | 4.43 | 57 | 0.00 |
| 26 | 4.39 | 58 | 4.31 |
| 27 | 0.00 | 59 | 4.43 |
| 28 | 4.89 | 60 | 4.13 |
| 29 | 0.00 | 61 | 4.43 |
| 30 | 0.00 | 62 | 4.43 |
| 31 | 0.00 | 63 | 4.33 |
| 32 | 0.00 | 64 | 4.43 |

### IC871

| | |
|---|---|
| 1 | 19.27 |
| 2 | 5.15 |
| 3 | 0.00 |
| 4 | 5.01 |
| 5 | 2.00 |

### IC872

| | |
|---|---|
| 1 | 19.37 |
| 2 | 9.05 |
| 3 | 0.00 |
| 4 | 9.00 |
| 5 | 2.16 |

### IC2451

| | | | |
|---|---|---|---|
| 1 | 4.46 | 16 | 8.97 |
| 2 | 4.52 | 17 | 4.83 |
| 3 | 4.51 | 18 | 0.00 |
| 4 | 4.48 | 19 | 3.39 |
| 5 | 4.48 | 20 | 0.00 |
| 6 | 4.48 | 21 | 4.47 |
| 7 | 4.51 | 22 | 4.52 |
| 8 | 4.51 | 23 | 4.52 |
| 9 | 1.35 | 24 | 4.50 |
| 10 | 4.52 | 25 | 4.50 |
| 11 | 1.58 | 26 | 4.47 |
| 12 | 1.59 | 27 | 4.48 |
| 13 | 4.30 | 28 | 4.51 |
| 14 | 4.30 | 29 | 4.53 |
| 15 | 0.00 | 30 | 4.48 |

### IC2201

| | | | |
|---|---|---|---|
| 1 | 0.00 | 13 | 3.16 |
| 2 | 0.00 | 14 | 2.18 |
| 3 | 0.00 | 15 | 3.12 |
| 4 | 2.32 | 16 | 3.23 |
| 5 | 2.18 | 17 | 0.00 |
| 6 | 0.25 | 18 | 4.40 |
| 7 | 4.71 | 19 | 4.50 |
| 8 | 2.39 | 20 | 0.00 |
| 9 | 2.27 | 21 | 2.20 |
| 10 | 0.40 | 22 | 2.20 |
| 11 | 2.22 | 23 | 0.00 |
| 12 | 3.00 | 24 | 0.00 |

### IC1101

| | |
|---|---|
| 1 | 0.00 |
| 2 | 0.00 |
| 3 | 0.00 |
| 4 | 0.00 |
| 5 | 2.00 |
| 6 | 2.20 |
| 7 | 0.00 |
| 8 | 3.30 |

### IC1112

| | |
|---|---|
| 1 | 0.00 |
| 2 | 0.00 |
| 3 | 0.00 |
| 4 | 0.00 |
| 5 | 4.78 |
| 6 | 4.78 |
| 7 | 4.78 |
| 8 | 4.84 |

### IC2302

| | |
|---|---|
| 1 | -22.42 |
| 2 | -22.41 |
| 3 | -0.36 |
| 4 | 21.99 |
| 5 | 0.00 |
| 6 | 4.72 |
| 7 | 0.00 |
| 8 | 2.67 |
| 9 | 0.00 |
| 10 | 0.00 |
| 11 | 0.00 |
| 12 | 5.48 |
| 13 | 0.00 |
| 14 | -21.10 |
| 15 | 0.00 |
| 16 | -5.61 |
| 17 | 0.00 |
| 18 | 0.00 |
| 19 | 0.00 |
| 20 | 0.00 |
| 21 | 9.83 |
| 22 | 21.90 |
| 23 | -0.33 |
| 24 | -22.42 |
| 25 | -11.61 |

### IC2304

| | |
|---|---|
| 1 | 4.51 |
| 2 | 4.51 |
| 3 | 4.51 |
| 4 | 0.00 |
| 5 | 4.48 |
| 6 | 4.48 |
| 7 | 4.48 |
| 8 | 8.99 |

## A - BOARD - TNP2AH045

| | Q031 | Q931 | Q932 | Q933 | Q934 | Q945 | Q2301 | Q2302 | Q2304 |
|---|---|---|---|---|---|---|---|---|---|
| B | 0.72 | 4.50 | 1.96 | 10.80 | 10.80 | 10.20 | 19.47 | 19.47 | 0.00 |
| C | 0.13 | 10.80 | 3.88 | 19.45 | 19.45 | 0.00 | -0.12 | 0.00 | 19.47 |
| E | 0.00 | 3.88 | 1.30 | 10.20 | 10.18 | 10.80 | 13.40 | 13.40 | 0.00 |

| | Q2306 | Q2307 | Q2313 | Q2451 | Q2452 | Q2501 | Q2502 | Q2503 | Q2504 |
|---|---|---|---|---|---|---|---|---|---|
| B | 0.00 | 0.00 | 0.00 | 4.50 | 4.50 | 2.74 | 2.65 | 2.82 | 11.17 |
| C | 4.72 | 0.00 | 0.00 | 8.97 | 8.97 | 11.17 | 11.18 | 11.16 | 3.20 |
| E | 0.00 | 0.00 | 0.00 | 3.87 | 3.87 | 2.12 | 2.00 | 2.20 | 11.70 |

| | Q2505 | Q2506 | Q2507 | Q2508 | Q2509 | Q2510 | Q3002 | Q3003 | Q3005 |
|---|---|---|---|---|---|---|---|---|---|
| B | 11.18 | 11.16 | 3.21 | 3.00 | 3.37 | 6.43 | 4.23 | 4.21 | 4.29 |
| C | 3.00 | 3.35 | 0.00 | 0.00 | 0.00 | 0.00 | 8.44 | 8.44 | 8.43 |
| E | 11.70 | 11.69 | 3.88 | 3.72 | 4.00 | 3.87 | 3.58 | 3.57 | 3.65 |

| | Q3006 | Q3007 | Q3008 | Q3011 | Q3012 | Q3013 | Q3014 | Q3015 |
|---|---|---|---|---|---|---|---|---|
| B | 4.26 | 4.20 | 4.30 | 4.47 | 4.18 | 4.30 | 4.17 | 4.30 |
| C | 8.42 | 8.44 | 8.43 | 0.00 | 8.92 | 8.92 | 8.92 | 8.92 |
| E | 3.62 | 3.55 | 3.65 | 5.15 | 3.54 | 3.67 | 3.53 | 3.66 |

## D - BOARD - TNP2AH046

| IC451 | |
|---|---|
| 1 | 0.00 |
| 2 | 17.06 |
| 3 | -17.11 |
| 4 | -18.46 |
| 5 | 0.30 |
| 6 | 16.78 |
| 7 | 0.00 |

| IC1501 | |
|---|---|
| 1 | 10.71 |
| 2 | 0.00 |
| 3 | 0.00 |
| 4 | 0.00 |
| 5 | 2.44 |
| 6 | 2.45 |
| 7 | 1.52 |
| 8 | 1.92 |

| IC701 | |
|---|---|
| 1 | 0.15 |
| 2 | 5.36 |
| 3 | 4.65 |
| 4 | 0.00 |
| 5 | 1.53 |
| 6 | 0.50 |
| 7 | 10.00 |
| 8 | 11.92 |

| IC805 | |
|---|---|
| 1 | 19.70 |
| 2 | 0.00 |
| 3 | 11.92 |

| IC7001 | | | |
|---|---|---|---|
| 1 | 0.00 | 10 | 19.10 |
| 2 | 0.00 | 11 | 0.00 |
| 3 | -19.32 | 12 | -20.36 |
| 4 | -20.37 | 13 | 0.00 |
| 5 | 19.10 | 14 | 0.00 |
| 6 | -0.26 | 15 | 0.00 |
| 7 | -0.25 | 16 | 0.00 |
| 8 | -20.36 | 17 | -20.36 |
| 9 | -0.31 | 18 | -0.12 |

| IC802 | |
|---|---|
| 1 | 139.00 |
| 2 | 18.54 |
| 3 | 0.00 |

| IC801↓ | |
|---|---|
| 1 | 1.26 |
| 2 | 0.42 |
| 3 | 0.16 |
| 4 | 0.00 |
| 5 | 0.00 |
| 6 | 7.30 |
| 7 | 20.28 |
| 8 | 0.00 |
| 9 | 6.11 |

| IC7002 | | | |
|---|---|---|---|
| 1 | 0.00 | 10 | 19.10 |
| 2 | 0.00 | 11 | -0.53 |
| 3 | -19.38 | 12 | -20.37 |
| 4 | -20.38 | 13 | -0.46 |
| 5 | 19.10 | 14 | -0.49 |
| 6 | 0.00 | 15 | 0.00 |
| 7 | 0.00 | 16 | 0.00 |
| 8 | -20.37 | 17 | -20.37 |
| 9 | 0.00 | 18 | 0.00 |

## D - BOARD - TNP2AH046

| | Q406 | Q503 | Q512 | Q513 | Q551 | Q606 | Q803↓ | Q854 |
|---|---|---|---|---|---|---|---|---|
| B | 0.59 | 0.00 | 5.74 | 0.27 | -0.22 | 0.00 | 20.28 | 138.60 |
| C | 0.00 | 11.16 | 11.92 | 5.75 | -85.20 | 9.82 | 0.00 | 0.00 |
| E | 0.00 | 0.00 | 5.80 | 0.00 | 0.00 | 0.00 | 20.28 | 138.90 |

| | Q1503 | Q1504 | Q1505 | Q7006 | Q7007 | Q7060 | Q7061 |
|---|---|---|---|---|---|---|---|
| B | 9.82 | 11.99 | 6.15 | -20.36 | -20.37 | 19.11 | -20.38 |
| C | 6.31 | 506.0 | 10.48 | -19.32 | -19.38 | 0.00 | 19.10 |
| E | 10.46 | 11.46 | 6.17 | -20.37 | -20.38 | 19.27 | -20.62 |

| | Q501 | Q502 | Q701 | Q801↓ |
|---|---|---|---|---|
| G | 5.80 | 11.13 | 10.00 | 6.83 |
| D | 15.97 | 0.00 | -0.98 | -15.70 |
| S | 0.00 | 0.00 | 0.00 | 0.00 |

## LR - BOARD - TNP2AA145

| | Q301 | Q302 | Q303 |
|---|---|---|---|
| B | 142.10 | 3.67 | 0.63 |
| C | 142.8 | 11.6 | 0.00 |
| E | 0.00 | 3.44 | 0.00 |

| | Q353 | Q354 | Q355 |
|---|---|---|---|
| B | 12.03 | 184.90 | 183.6 |
| C | 183.60 | 219.10 | 0.34 |
| E | 11.60 | 184.40 | 184.3 |

| | Q903 | Q904 | Q905 |
|---|---|---|---|
| B | 9.56 | 0.98 | 9.56 |
| C | 0.00 | 8.92 | 19.19 |
| E | 10.20 | 0.35 | 8.95 |

| | Q906 | Q907 | Q901 |
|---|---|---|---|
| B | 10.20 | 8.95 | 137.60 |
| C | 19.19 | 0.00 | 129.80 |
| E | 9.60 | 9.57 | 138.20 |

| | Q957 | Q958 |
|---|---|---|
| B | 129.10 | 9.48 |
| C | 129.80 | 69.50 |
| E | 69.60 | 8.91 |

## LG - BOARD - TNP2AA146

| | Q331 | Q373 | Q374 |
|---|---|---|---|
| B | 4.00 | 12.03 | 174.80 |
| C | 11.60 | 173.30 | 219.10 |
| E | 3.77 | 11.60 | 174.30 |

| | Q375 | Q934 | Q935 |
|---|---|---|---|
| B | 0.00 | 9.56 | 9.57 |
| C | 0.38 | 0.00 | 19.19 |
| E | 174.00 | 10.17 | 8.97 |

| | Q936 | Q937 | Q938 |
|---|---|---|---|
| B | 10.17 | 8.98 | 137.60 |
| C | 19.20 | 0.00 | 129.80 |
| E | 9.60 | 9.59 | 138.20 |

| | Q952 | Q953 | Q955 |
|---|---|---|---|
| B | 10.15 | 10.15 | 129.20 |
| C | 19.19 | 19.19 | 71.00 |
| E | 9.57 | 9.57 | 129.80 |

| | Q956 | Q941 | Q951 |
|---|---|---|---|
| B | 9.72 | 0.99 | 10.16 |
| C | 70.90 | 9.16 | 19.19 |
| E | 9.15 | 0.36 | 9.56 |

## LB - BOARD - TNP2AA147

| | Q959 | Q960 | Q961 |
|---|---|---|---|
| B | 129.20 | 9.68 | 137.60 |
| C | 70.10 | 70.10 | 129.80 |
| E | 129.80 | 9.11 | 138.20 |

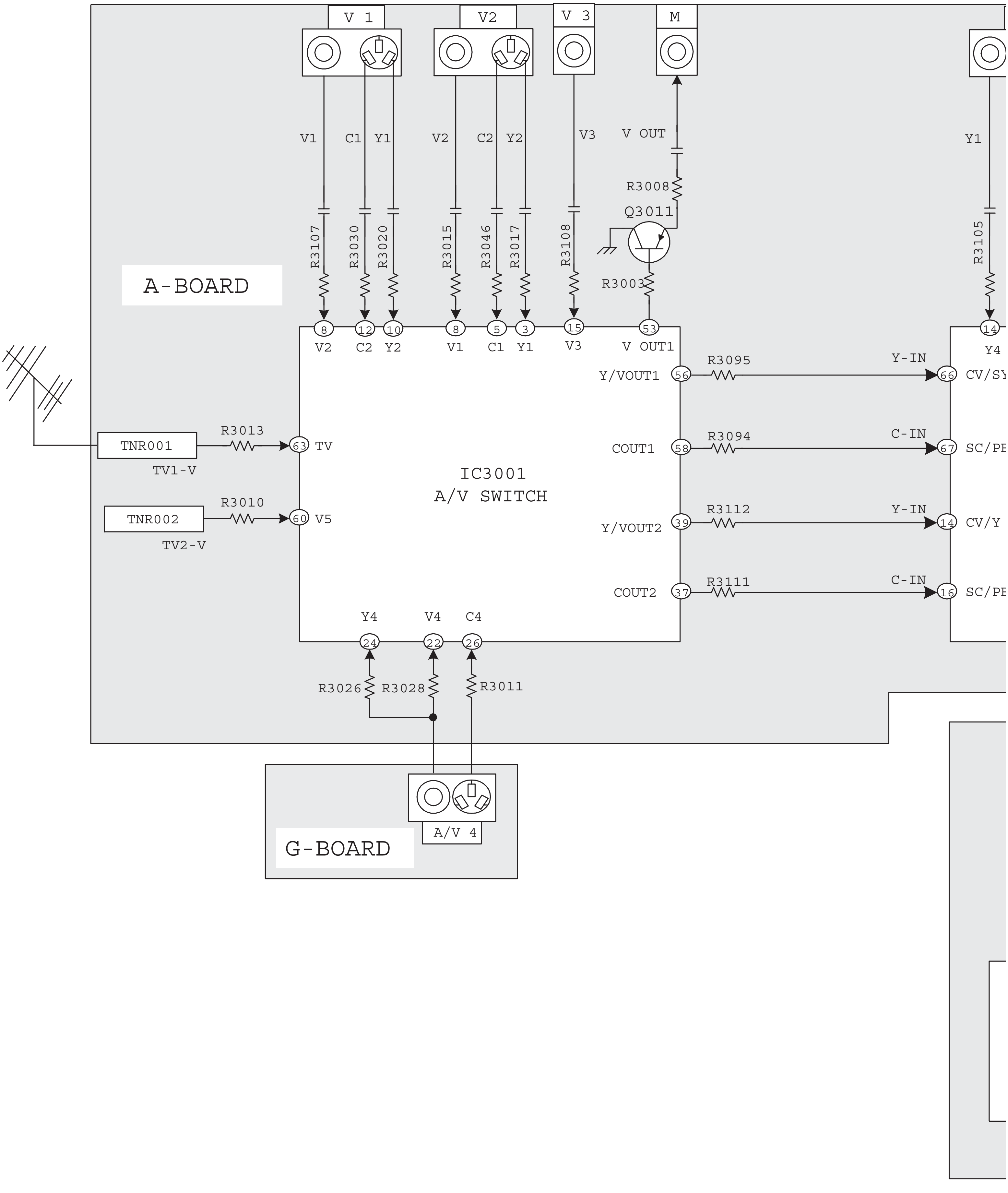
| | Q964 | Q965 | Q966 |
|---|---|---|---|
| B | 0.99 | 9.57 | 9.57 |
| C | 9.12 | 0.00 | 19.19 |
| E | 0.35 | 10.20 | 8.97 |

| | Q967 | Q968 | Q368 |
|---|---|---|---|
| B | 10.20 | 8.97 | 4.46 |
| C | 19.19 | 0.00 | 0.00 |
| E | 9.61 | 9.59 | 3.93 |

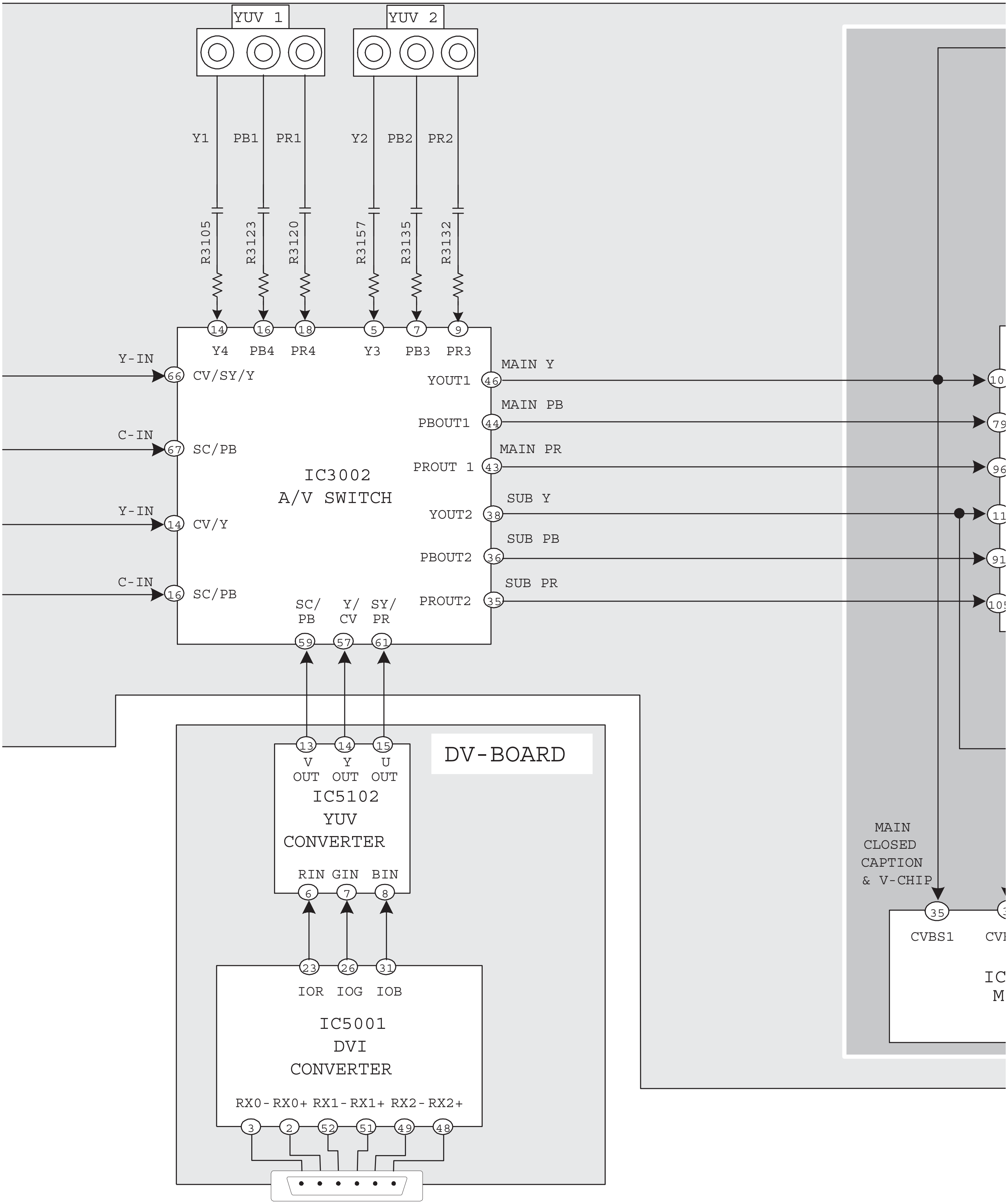
| | Q393 | Q394 | Q395 |
|---|---|---|---|
| B | 12.03 | 176.20 | 174.90 |
| C | 174.80 | 219.10 | 0.37 |
| E | 11.58 | 175.90 | 175.60 |

| | Q361 | Q362 | Q363 |
|---|---|---|---|
| B | 5.11 | 4.47 | 3.82 |
| C | 12.04 | 12.00 | 11.58 |
| E | 0.00 | 3.87 | 3.61 |

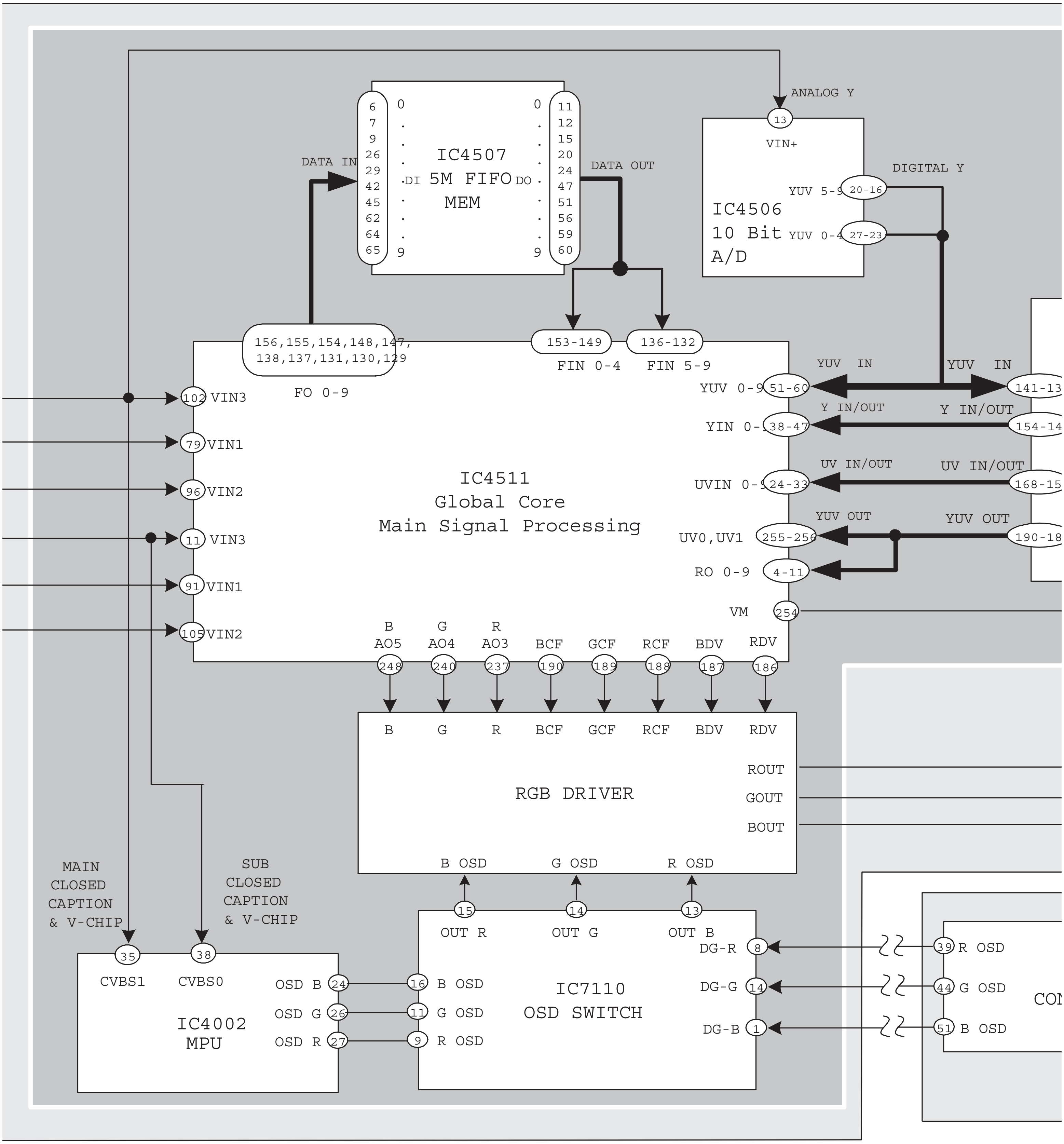
| | Q364 | Q365 | Q366 |
|---|---|---|---|
| B | 3.87 | 5.92 | 5.07 |
| C | 0.00 | 12.00 | 12.04 |
| E | 3.42 | 5.28 | 4.46 |


V 1
V2
V 3
M
V1
C1
Y1
V2
C2
Y2
V3
V OUT
Y1
R3008
Q3011
R3107
R3030
R3020
R3015
R3046
R3017
R3108
R3003
R3105
A-BOARD
8
12
10
8
5
3
15
53
14
V2
C2
Y2
V1
C1
Y1
V3
V OUT1
Y4
R3095
Y-IN
Y/VOUT1
56
66
CV/SY
TNR001
R3013
63
TV
TV1-V
R3094
C-IN
COUT1
58
67
SC/PE
IC3001
A/V SWITCH
TNR002
R3010
60
V5
TV2-V
R3112
Y-IN
Y/VOUT2
39
14
CV/Y
R3111
C-IN
COUT2
37
16
SC/PE
Y4
V4
C4
24
22
26
R3026
R3028
R3011
A/V 4
G-BOARD

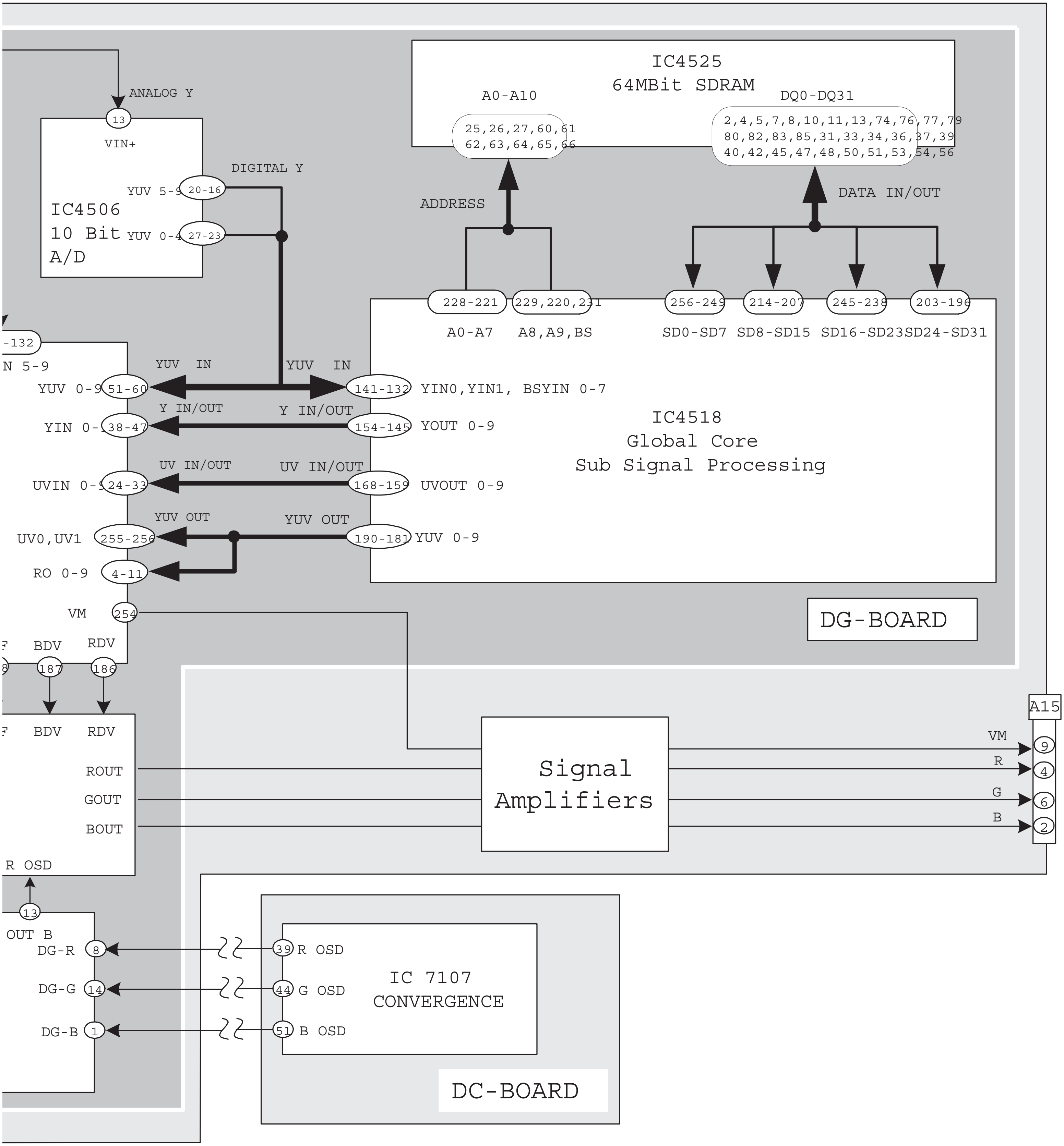
**VIDEO BLOCK DIAGRAM 1/4 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**


YUV 1
YUV 2
Y1
PB1
PR1
Y2
PB2
PR2
R3105
R3123
R3120
R3157
R3135
R3132
14
16
18
5
7
9
Y4
PB4
PR4
Y3
PB3
PR3
Y-IN
66
CV/SY/Y
C-IN
67
SC/PB
Y-IN
14
CV/Y
C-IN
16
SC/PB
IC3002
A/V SWITCH
MAIN Y
YOUT1
46
MAIN PB
PBOUT1
44
MAIN PR
PROUT 1
43
SUB Y
YOUT2
38
SUB PB
PBOUT2
36
SUB PR
PROUT2
35
SC/
PB
Y/
CV
SY/
PR
59
57
61
10
79
96
11
91
105
13
14
15
V
OUT
Y
OUT
U
OUT
IC5102
YUV
CONVERTER
RIN
GIN
BIN
6
7
8
DV-BOARD
23
26
31
IOR
IOG
IOB
IC5001
DVI
CONVERTER
RX0-
RX0+
RX1-
RX1+
RX2-
RX2+
3
2
52
51
49
48
MAIN
CLOSED
CAPTION
& V-CHIP
35
CVBS1
CVI
IC
M

**VIDEO BLOCK DIAGRAM 2/4 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**

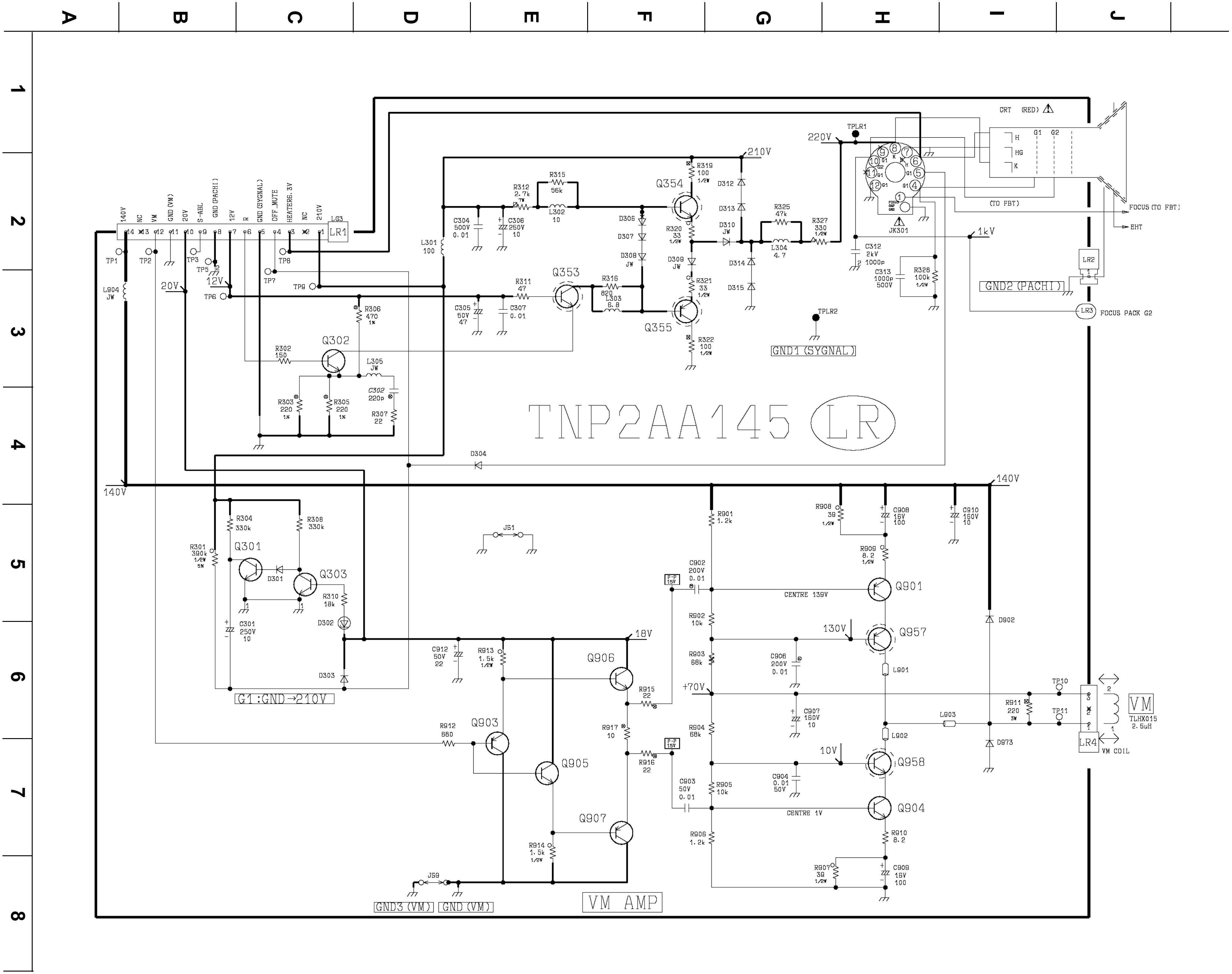

ANALOG Y
13
VIN+
IC4506
10 Bit
A/D
DIGITAL Y
YUV 5-9
20-16
YUV 0-4
27-23
DATA IN
6
7
9
26
29
42
45
62
64
65
0
9
DI
IC4507
5M FIFO
MEM
DO
0
9
11
12
15
20
24
47
51
56
59
60
DATA OUT
156,155,154,148,147,
138,137,131,130,129
FO 0-9
153-149
FIN 0-4
136-132
FIN 5-9
YUV IN
YUV IN
YUV 0-9
51-60
141-13
Y IN/OUT
Y IN/OUT
YIN 0-9
38-47
154-14
UV IN/OUT
UV IN/OUT
UVIN 0-9
24-33
168-15
YUV OUT
YUV OUT
UV0,UV1
255-256
190-18
RO 0-9
4-11
VM
254
102
VIN3
79
VIN1
96
VIN2
11
VIN3
91
VIN1
105
VIN2
IC4511
Global Core
Main Signal Processing
B
AO5
248
G
AO4
240
R
AO3
237
BCF
190
GCF
189
RCF
188
BDV
187
RDV
186
B
G
R
BCF
GCF
RCF
BDV
RDV
RGB DRIVER
ROUT
GOUT
BOUT
B OSD
G OSD
R OSD
MAIN
CLOSED
CAPTION
& V-CHIP
SUB
CLOSED
CAPTION
& V-CHIP
35
38
CVBS1
CVBS0
IC4002
MPU
OSD B
24
OSD G
26
OSD R
27
15
14
13
OUT R
OUT G
OUT B
16
B OSD
11
G OSD
9
R OSD
IC7110
OSD SWITCH
DG-R
8
DG-G
14
DG-B
1
39
R OSD
44
G OSD
51
B OSD
CON

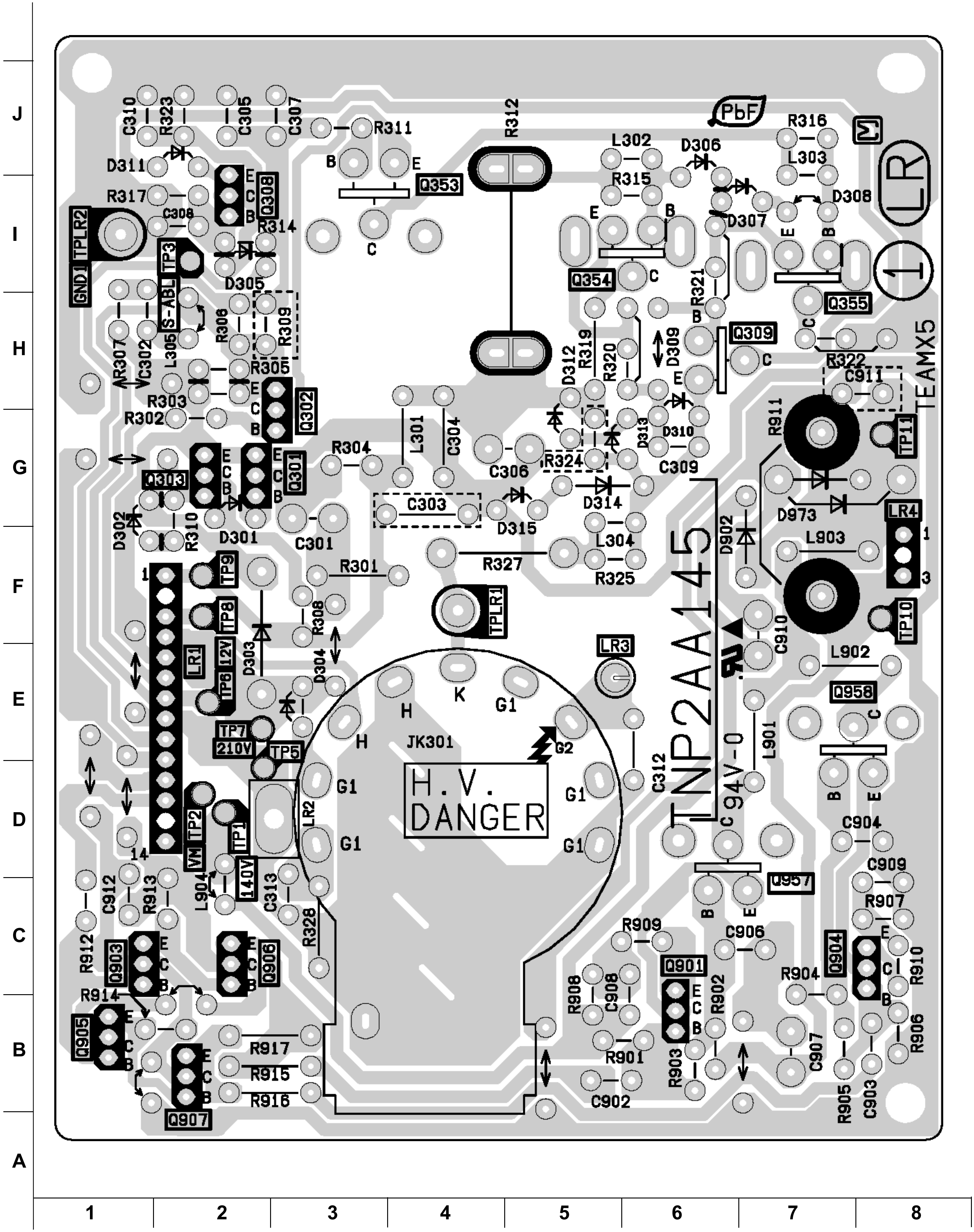
**VIDEO BLOCK DIAGRAM 3/4 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**


IC4525
64MBit SDRAM
A0-A10
DQ0-DQ31
25,26,27,60,61
62,63,64,65,66
2,4,5,7,8,10,11,13,74,76,77,79
80,82,83,85,31,33,34,36,37,39
40,42,45,47,48,50,51,53,54,56
ADDRESS
DATA IN/OUT
ANALOG Y
13
VIN+
DIGITAL Y
YUV 5-9
20-16
IC4506
10 Bit
A/D
YUV 0-4
27-23
228-221
229,220,231
256-249
214-207
245-238
203-196
A0-A7
A8,A9,BS
SD0-SD7
SD8-SD15
SD16-SD23
SD24-SD31
-132
N 5-9
YUV IN
YUV IN
YUV 0-9
51-60
141-132
YIN0,YIN1, BSYIN 0-7
Y IN/OUT
Y IN/OUT
YIN 0-
38-47
154-145
YOUT 0-9
IC4518
Global Core
Sub Signal Processing
UV IN/OUT
UV IN/OUT
UVIN 0-
24-33
168-159
UVOUT 0-9
YUV OUT
YUV OUT
UV0,UV1
255-256
190-181
YUV 0-9
RO 0-9
4-11
VM
254
DG-BOARD
F
BDV
RDV
187
186
F
BDV
RDV
ROUT
GOUT
BOUT
R OSD
A15
VM
R
G
B
9
4
6
2
Signal
Amplifiers
13
OUT B
DG-R
8
DG-G
14
DG-B
1
39
R OSD
44
G OSD
51
B OSD
IC 7107
CONVERGENCE
DC-BOARD

**VIDEO BLOCK DIAGRAM 4/4 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**

**LR-BOARD TNP2AA145 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**

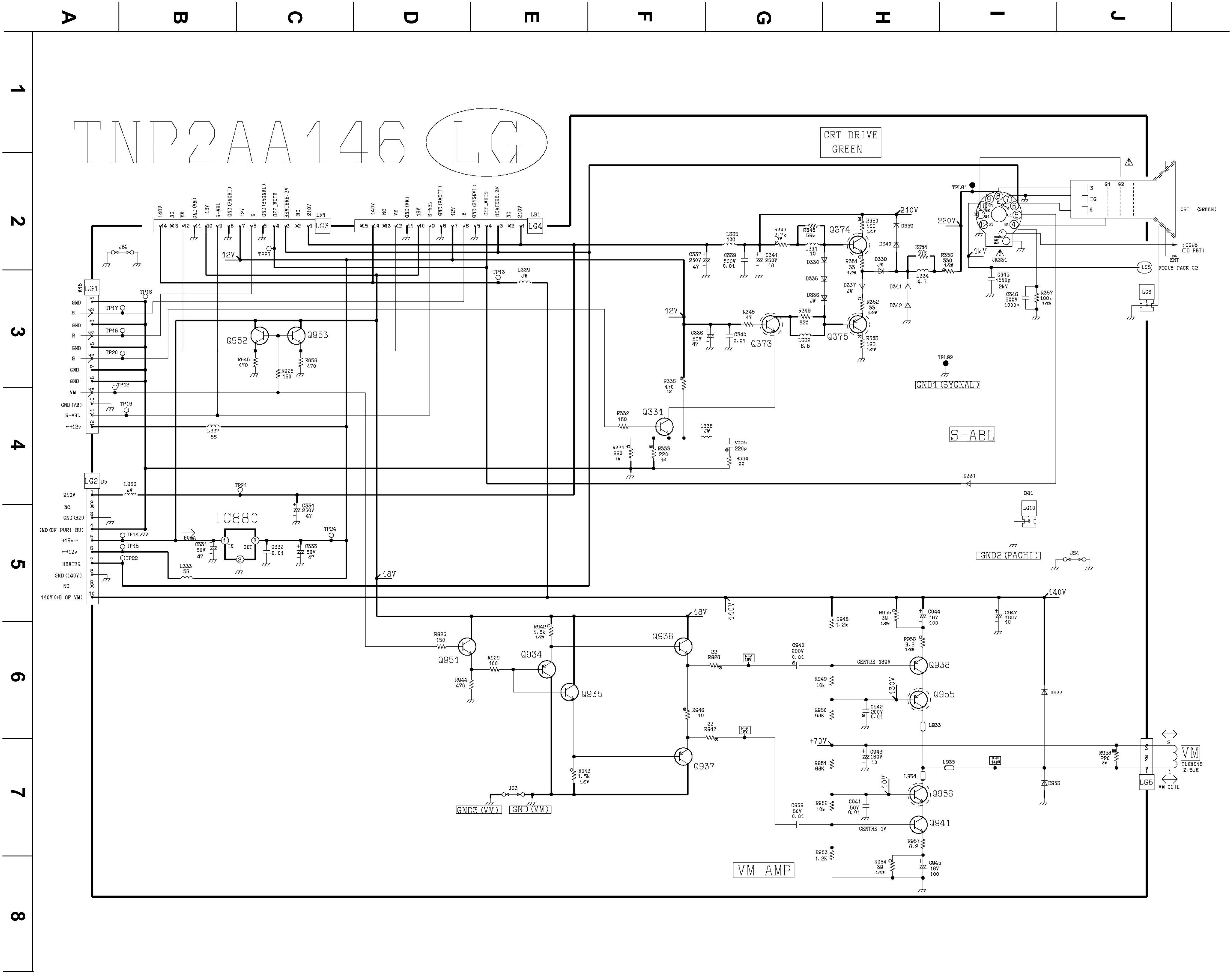

A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
140V
NC
VM
GND (VM)
20V
S-ABL
GND (PACHI)
12V
R
GND (SYGNAL)
OFF_MUTE
HEATER6.3V
NC
210V
LG3
LR1
TP1
TP2
TP3
TP5
TP6
TP7
TP8
TP9
L904 JW
20V
12V
140V
CRT (RED)
TPLR1
220V
210V
H
HG
K
G1
G2
(TO FBT)
FOCUS (TO FBT)
EHT
JK301
1kV
LR2
GND2 (PACHI)
LR3
FOCUS PACK G2
TPLR2
GND1 (SYGNAL)
R315 56k
R312 2.7k
L302 10
C304 500V 0.01
C306 250V 10
L301 100
Q354
R319 100 1/2W
D312
D313
D306
D307
D308 JW
R320 33 1/2W
D310 JW
D309 JW
R325 47k
L304 4.7
R327 330 1/2W
C312 2kV 1000p
C313 1000p 500V
R328 100k 1/2W
D314
D315
R321 33 1/2W
Q355
R322 100 1/2W
R311 47
Q353
R316 820
L303 6.8
C305 50V 47
C307 0.01
R306 470 1%
Q302
R302 150
L305 JW
C302 220p
R303 220 1%
R305 220 1%
R307 22
TNP2AA145 (LR)
D304
R304 330k
R308 330k
R301 390k 1/2W 5%
Q301
D301
Q303
R310 18k
D302
C301 250V 10
D303
G1:GND→210V
JS1
C912 50V 22
R913 1.5k 1/2W
Q906
18V
R915 22
R917 10
R916 22
P-P 15V
R912 680
Q903
Q905
Q907
R914 1.5k 1/2W
JS9
GND3 (VM)
GND (VM)
VM AMP
R901 1.2k
R908 39 1/2W
C908 16V 100
C910 160V 10
R909 8.2 1/2W
C902 200V 0.01
Q901
CENTRE 139V
R902 10k
130V
Q957
R903 68k
C906 200V 0.01
L901
+70V
C907 160V 10
R904 68k
L902
10V
Q958
C903 50V 0.01
C904 0.01 50V
R905 10k
Q904
CENTRE 1V
R906 1.2k
R910 8.2
R907 39 1/2W
C909 16V 100
D902
D973
L903
R911 220 3W
TP10
TP11
LR4
VM COIL
VM
TLHX015 2.5uH



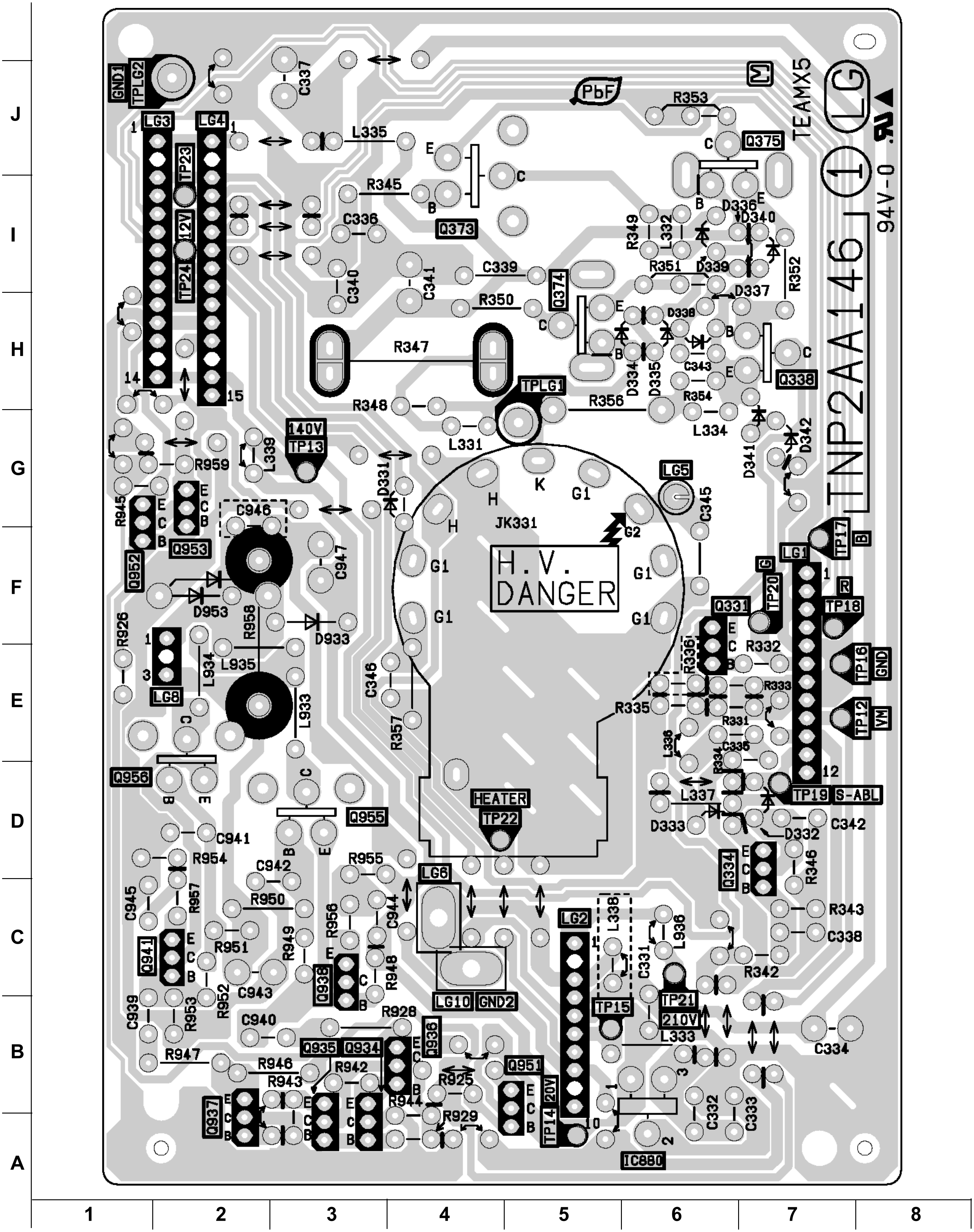
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
C310
R323
C305
C307
R311
R312
PbF
R316
L302
D306
D311
Q308
Q353
L303
R315
R317
C308
R314
D307
D308
LR
TPLR2
TP3
GND1
Q354
R321
Q355
1
S-ABL
D305
R306
R309
L305
R307
C302
R305
R303
R302
Q302
D312
R319
R320
D309
Q309
R322
C911
TEAMX5
R911
TP11
L301
C304
R304
Q303
Q301
R324
D313
D310
C306
C309
D314
C303
D315
D973
LR4
D302
R310
D301
C301
D902
L903
L304
R327
R325
R301
TP9
TP8
R308
TPLR1
TNP2AA145
TP10
C910
LR1
12V
D303
D304
LR3
L902
Q958
TP6
K
G1
H
JK301
TP7
210V
TP5
G2
L901
C312
94V-0
H.V.
DANGER
LR2
TP2
VM
TP1
140V
C904
Q957
C909
C912
R913
L904
C313
R328
R909
R907
C906
R912
Q903
Q906
Q901
R904
Q904
R910
R914
R908
C908
R902
Q905
R917
R901
C907
R906
R915
R903
R916
C902
R905
C903
Q907
E
C
B
14

LR-BOARD TNP2AA145 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G

LG-BOARD TNP2AA146 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G



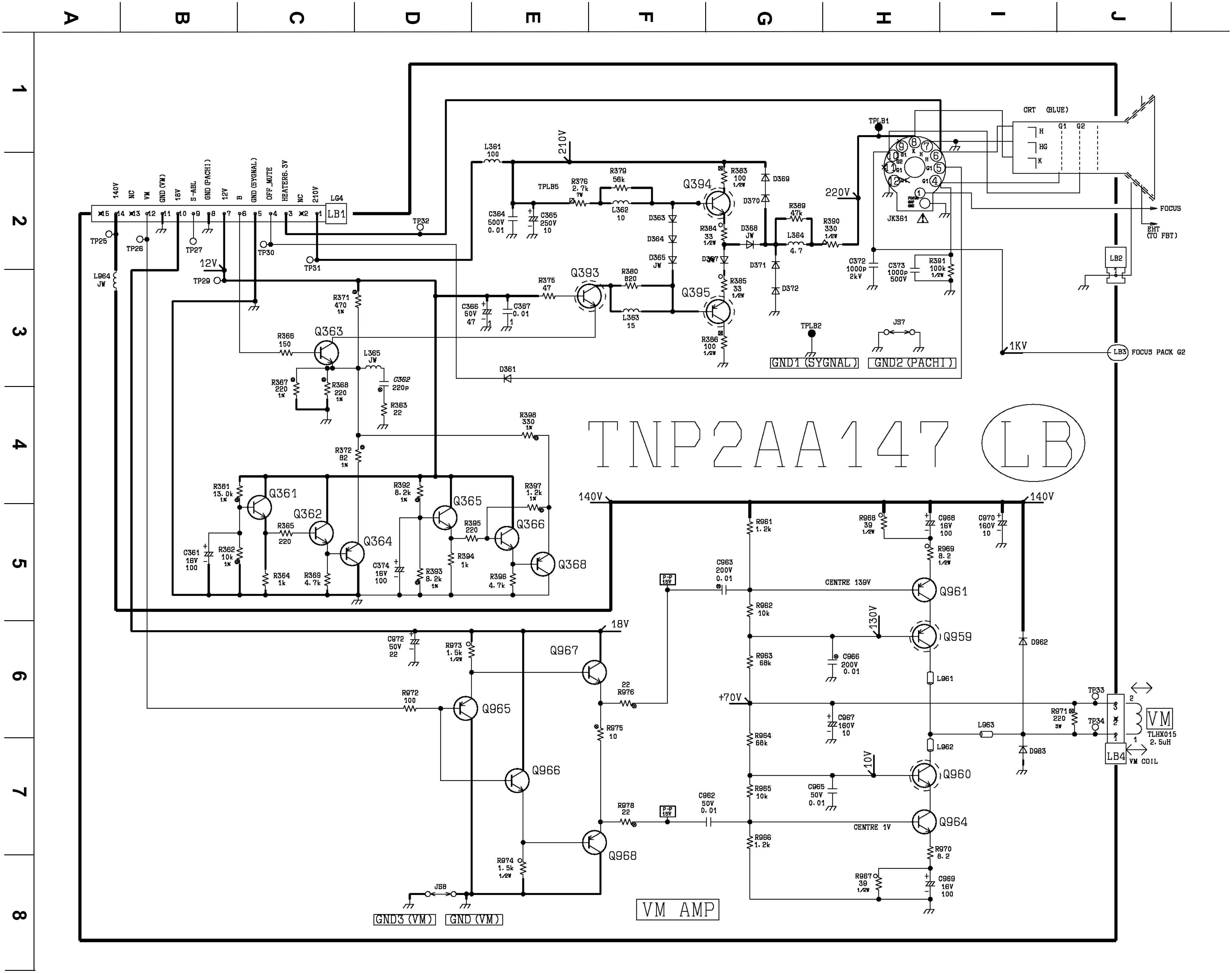
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
TNP2AA146 (LG)
CRT DRIVE GREEN
S-ABL
VM AMP
LG1
LG2
LG3
LG4
LG5
LG6
LG8
LG10
LR1
LB1
IC880
GND1 (SYGNAL)
GND2 (PACHI)
GND3 (VM)
GND (VM)
CRT (GREEN)
FOCUS (TO FBT)
EHT
FOCUS PACK G2
VM
TLHX015 2.5uH
VM COIL
Q331
Q373
Q374
Q375
Q934
Q935
Q936
Q937
Q938
Q941
Q951
Q952
Q953
Q955
Q956
210V
220V
1kV
12V
18V
140V
+70V
130V
10V
CENTRE 139V
CENTRE 1V
JK331
TPLG1
TPLG2
JS2
JS3
JS4
GND
B
R
G
VM
GND (VM)
S-ABL
←+12v
210V
NC
GND (H2)
GND (OF PURI BU)
+18v→
←+12v
HEATER
GND (140V)
140V (+B OF VM)
140V
NC
VM
GND (VM)
18V
S-ABL
GND (PACHI)
12V
R
B
GND (SYGNAL)
OFF_MUTE
HEATER6.3V



J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
GND1
TPLG2
C337
PbF
TEAMX5
LG
94V-0
TNP2AA146
R353
Q375
LG3
LG4
L335
TP23
12V
TP24
R345
Q373
C336
C340
C341
C339
R350
Q374
R349
L332
D336
D340
R351
D339
R352
D337
D338
D334
D335
C343
Q338
R354
R347
TPLG1
R348
R356
L331
L334
140V
TP13
L339
R959
D331
D341
D342
K
H
G1
G2
JK331
H.V.
DANGER
LG5
C345
R945
Q952
Q953
C946
C947
TP17
LG1
TP20
TP18
TP16
GND
TP12
VM
D953
R958
D933
Q331
R332
R336
R333
R926
LG8
L934
L935
L933
C346
R357
R335
R331
L336
C335
R334
Q956
Q955
HEATER
TP22
L337
D333
D332
C342
TP19
S-ABL
C941
R954
C942
R955
LG6
Q334
R346
C945
R957
R950
C944
R343
C338
LG2
L338
L936
Q941
R951
R949
R956
C331
R948
R342
Q938
C943
R952
LG10
GND2
TP15
TP21
210V
C939
R953
C940
R928
L333
C334
R947
Q936
Q935
Q934
R946
R942
R943
R925
Q951
C332
C333
Q937
R944
R929
20V
TP14
IC880
E
C
B

**LG-BOARD TNP2AA146 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**

LB-BOARD TNP2AA147 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


A
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C
D
E
F
G
H
I
J
1
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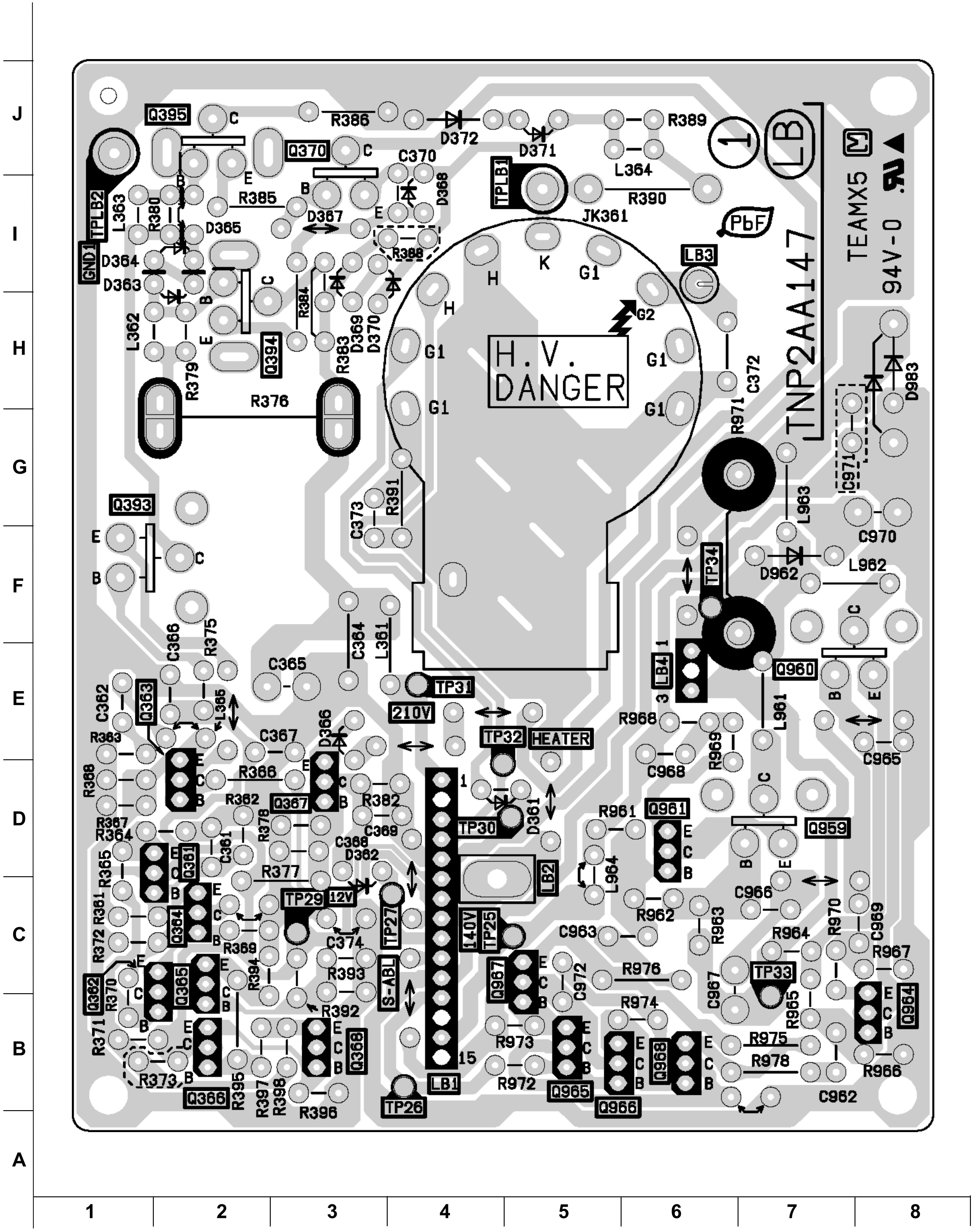
6
7
8
TNP2AA147 (LB)
LB1
LG4
140V
NC
VM
GND(VM)
18V
S-ABL
GND(PACHI)
12V
B
GND(SYGNAL)
OFF_MUTE
HEATER6.3V
NC
210V
TP25
TP26
TP27
TP29
TP30
TP31
TP32
L964 JW
12V
L361 100
210V
TPLB5
R376 2.7k 7W
R379 56k
L362 10
C364 500V 0.01
C365 250V 10
D363
D364
D365 JW
Q394
R383 100 1/2W
R384 33 1/2W
D369
D370
D368 JW
D367
R385 33 1/2W
Q395
R386 100 1/2W
D371
D372
R389 47k
L364 4.7
R390 330 1/2W
220V
C372 1000p 2kV
C373 1000p 500V
R391 100k 1/2W
TPLB1
JK361
CRT (BLUE)
H
HG
K
G1
G2
FOCUS
EHT (TO FBT)
LB2
1KV
LB3 FOCUS PACK G2
TPLB2
JS7
GND1(SYGNAL)
GND2(PACHI)
Q393
R375 47
R380 820
L363 15
C366 50V 47
C367 0.01
R371 470 1%
Q363
R366 150
L365 JW
C362 220p
R363 22
R367 220 1%
R368 220 1%
D361
R398 330 1%
R372 82 1%
R361 13.0k 1%
Q361
Q362
R365 220
Q364
R362 10k 1%
C361 16V 100
R364 1k
R369 4.7k
R392 8.2k 1%
Q365
R395 220
Q366
R397 1.2k 1%
R394 1k
C374 16V 100
R393 8.2k 1%
R396 4.7k
Q368
140V
140V
R961 1.2k
R968 39 1/2W
C968 16V 100
C970 160V 10
R969 8.2 1/2W
C963 200V 0.01
P-P 15V
CENTRE 139V
Q961
R962 10k
130V
Q959
D962
R963 68k
C966 200V 0.01
L961
+70V
C967 160V 10
R964 68k
L962
L963
R971 220 3W
TP33
TP34
VM
TLHX015 2.5uH
LB4
VM COIL
D963
10V
Q960
R965 10k
C965 50V 0.01
C962 50V 0.01
CENTRE 1V
Q964
R966 1.2k
R970 8.2
R967 39 1/2W
C969 16V 100
18V
C972 50V 22
R973 1.5k 1/2W
Q967
R976 22
R975 10
R972 100
Q965
Q966
R978 22
Q968
R974 1.5k 1/2W
JS8
GND3(VM)
GND(VM)
VM AMP



J
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A
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5
6
7
8
LB
TNP2AA147
TEAMX5
94V-0
PbF
H.V.
DANGER
JK361
TPLB1
TPLB2
GND1
LB1
LB2
LB3
LB4
TP25
TP26
TP27
TP29
TP30
TP31
TP32
TP33
TP34
210V
140V
12V
HEATER
S-ABL
H
K
G1
G2
Q361
Q363
Q364
Q365
Q366
Q367
Q368
Q370
Q393
Q394
Q395
Q959
Q960
Q961
Q964
Q965
Q966
Q967
Q968
R361
R362
R363
R364
R365
R366
R367
R368
R369
R370
R371
R372
R373
R375
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R377
R378
R379
R380
R382
R383
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R386
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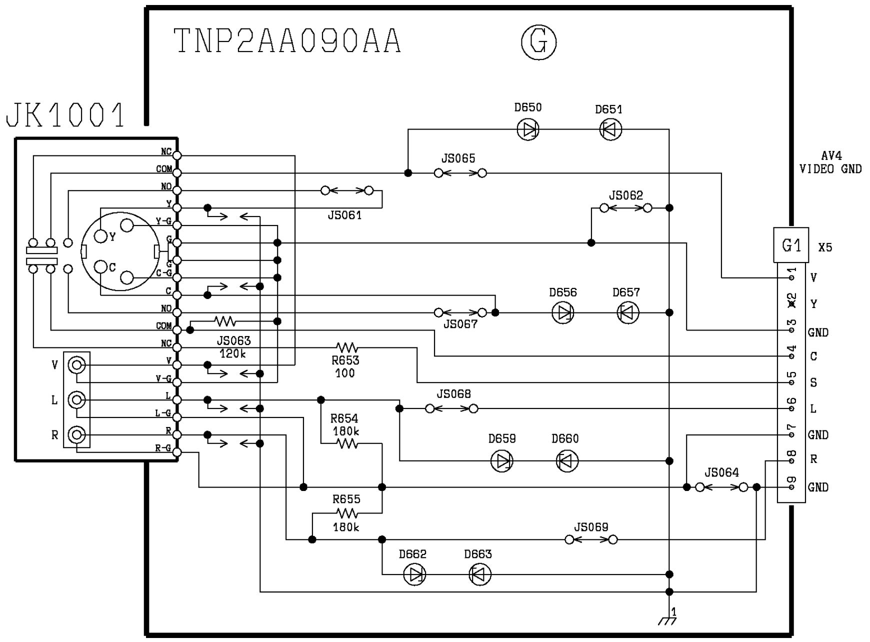
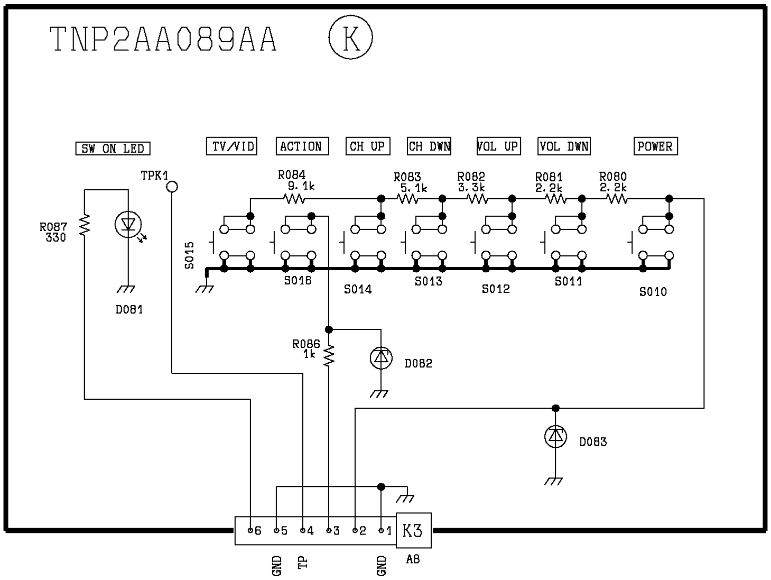
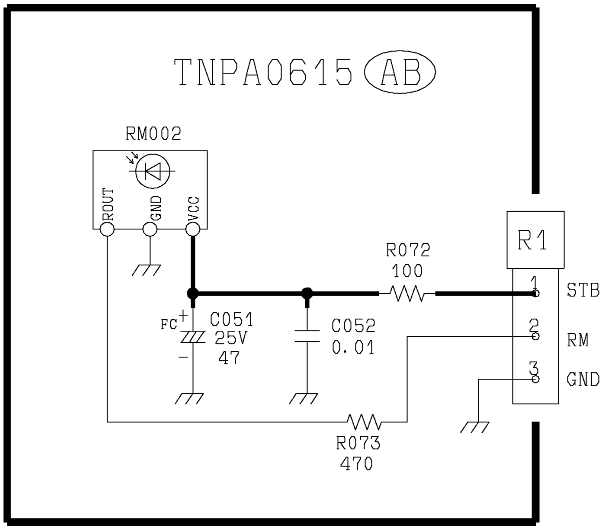
R389
R390
R391
R392
R393
R394
R395
R396
R397
R398
R961
R962
R963
R964
R965
R966
R967
R968
R969
R970
R971
R972
R973
R974
R975
R976
R978
C361
C362
C364
C365
C366
C367
C368
C369
C370
C372
C373
C374
C962
C963
C965
C966
C967
C968
C969
C970
C971
C972
D361
D362
D363
D364
D365
D366
D367
D368
D369
D370
D371
D372
D962
D983
L361
L362
L363
L364
L365
L961
L962
L963
L964
E
C
B
1
3
15

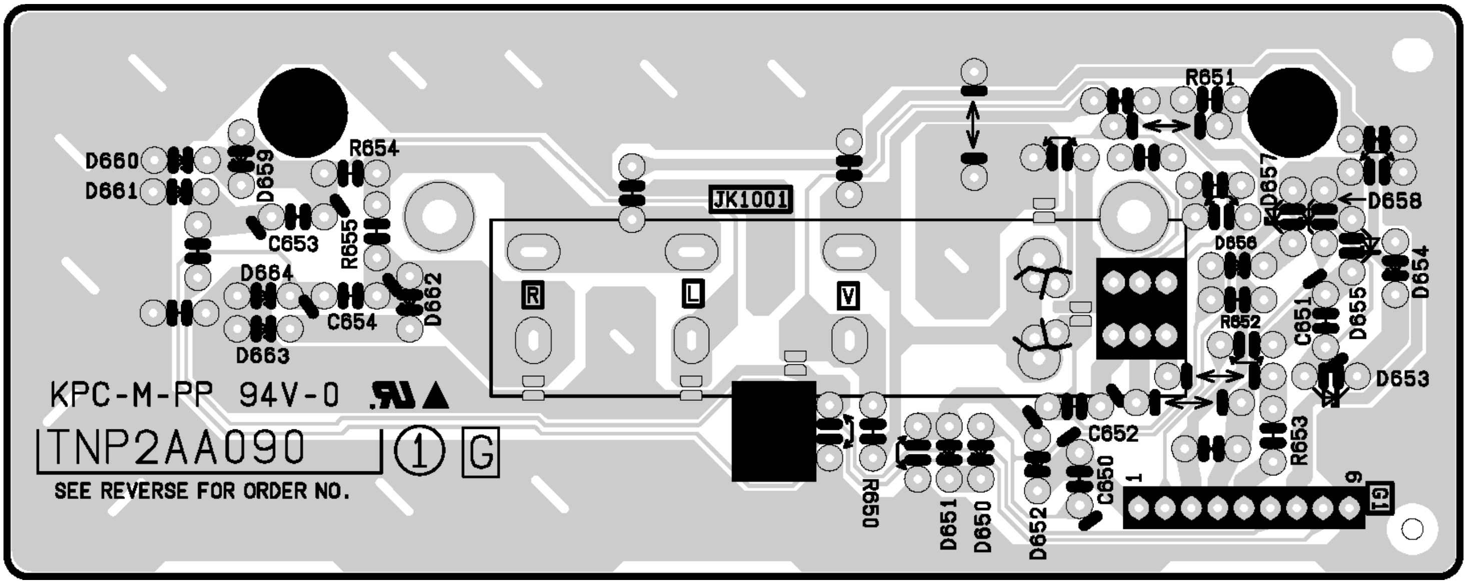
LB-BOARD TNP2AA147 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G

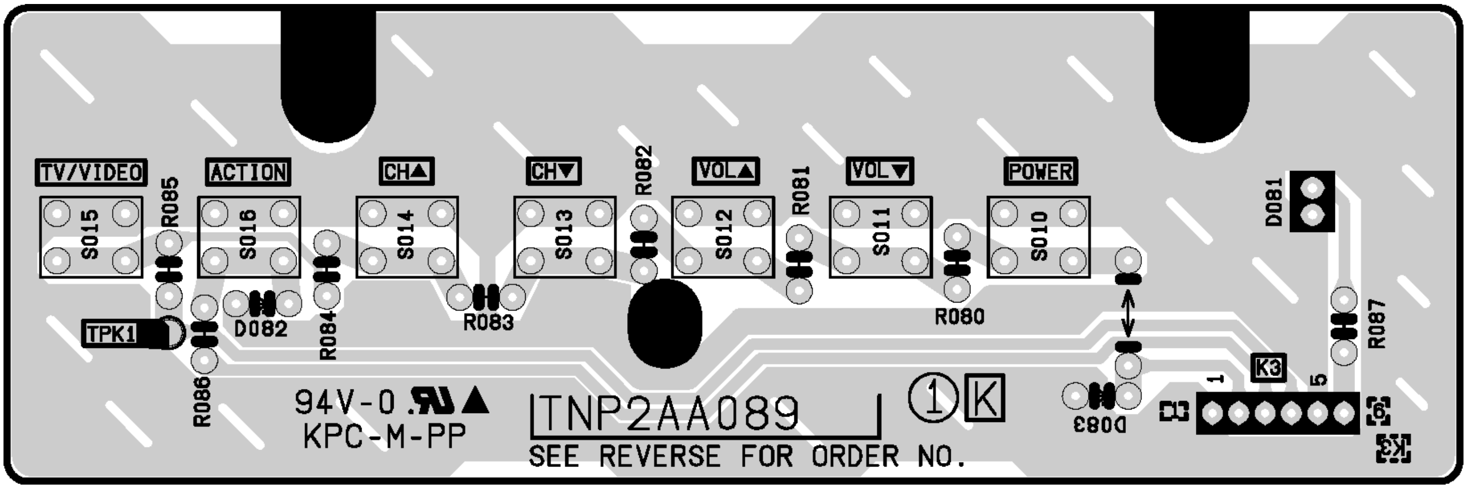

TNP2AA090AA
G
JK1001
NC
COM
NO
Y
Y-G
G
G
C-G
C
NO
COM
NC
V
V-G
L
L-G
R
R-G
Y
C
V
L
R
D650
D651
JS065
AV4
VIDEO GND
JS061
JS062
G1
X5
1 V
2 Y
3 GND
4 C
5 S
6 L
7 GND
8 R
9 GND
D656
D657
JS067
JS063
120k
R653
100
JS068
R654
180k
D659
D660
JS064
R655
180k
JS069
D662
D663
1

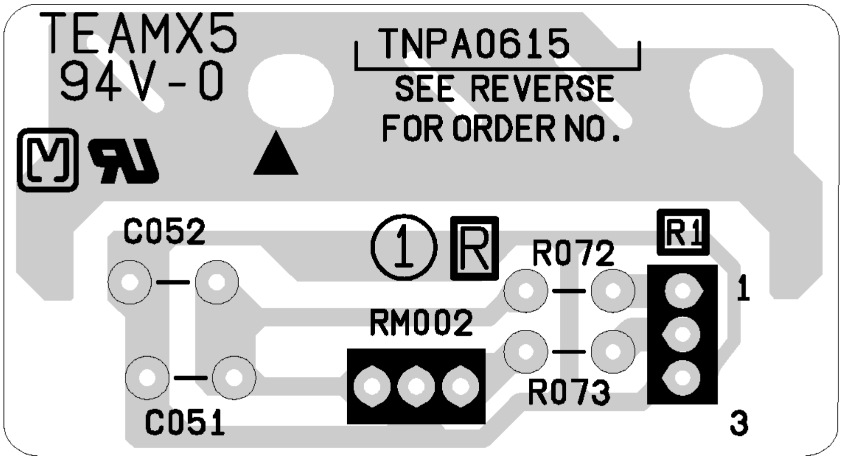

TNP2AA089AA
K
SW ON LED
TV/VID
ACTION
CH UP
CH DWN
VOL UP
VOL DWN
POWER
TPK1
R084
9.1k
R083
5.1k
R082
3.3k
R081
2.2k
R080
2.2k
R087
330
S015
S016
S014
S013
S012
S011
S010
D081
R086
1k
D082
D083
6
5
4
3
2
1
K3
A8
GND
TP
GND


TNPA0615
AB
RM002
ROUT
GND
VCC
R072
100
R1
1 STB 5V
2 RM IN
3 GND
FC
+
-
C051
25V
47
C052
0.01
R073
470

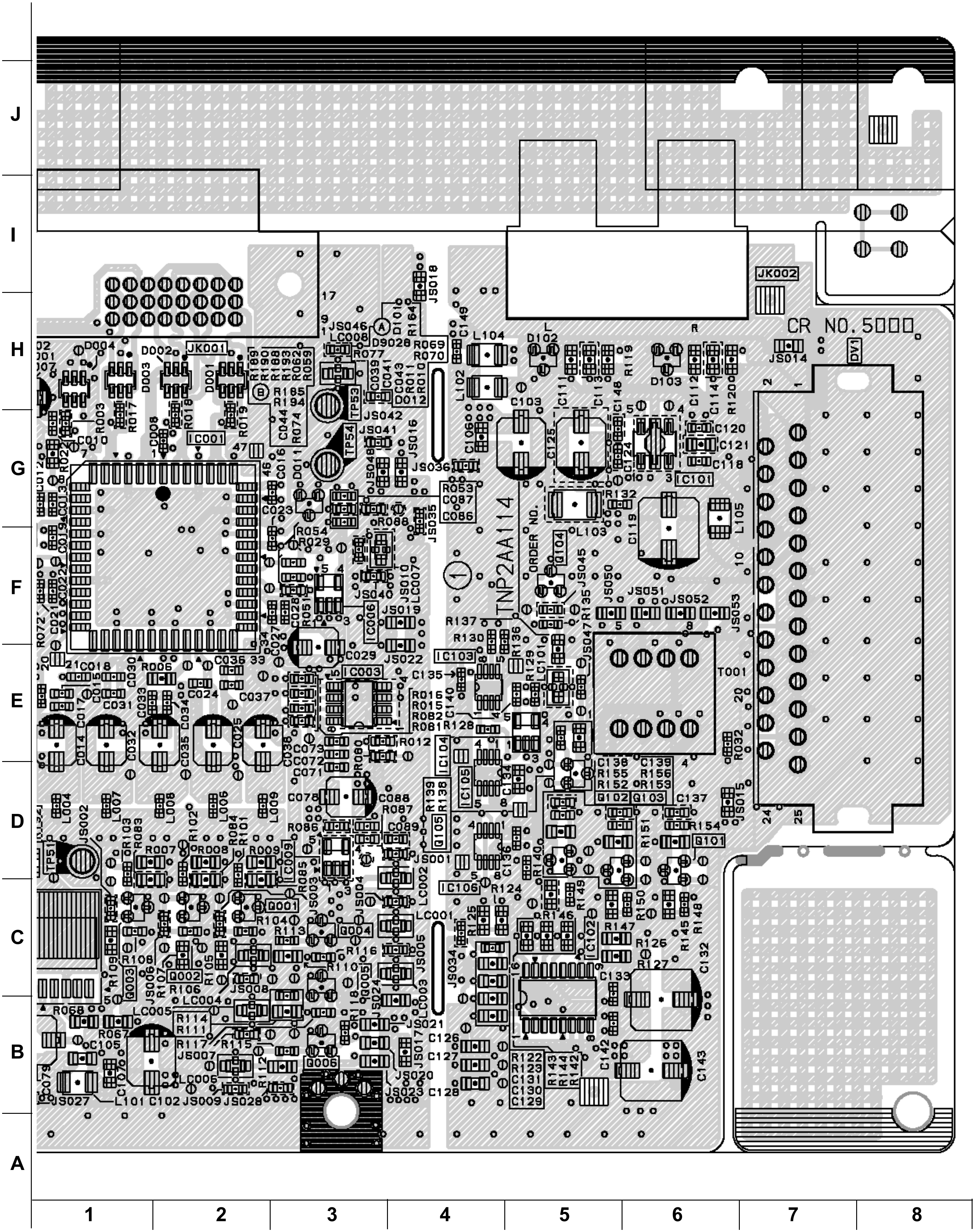
**G-BOARD TNP2AA090AA K-BOARD TNP2AA089AA R-BOARD TNPA0615AB PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**


D660
D661
D659
R654
C653
R655
D664
C654
D662
D663
KPC-M-PP 94V-0
TNP2AA090
①
G
SEE REVERSE FOR ORDER NO.
JK1001
R
L
V
R651
D657
D658
D656
D654
D655
C651
R652
D653
C652
R653
C650
R650
D651
D650
D652
1
9
G1

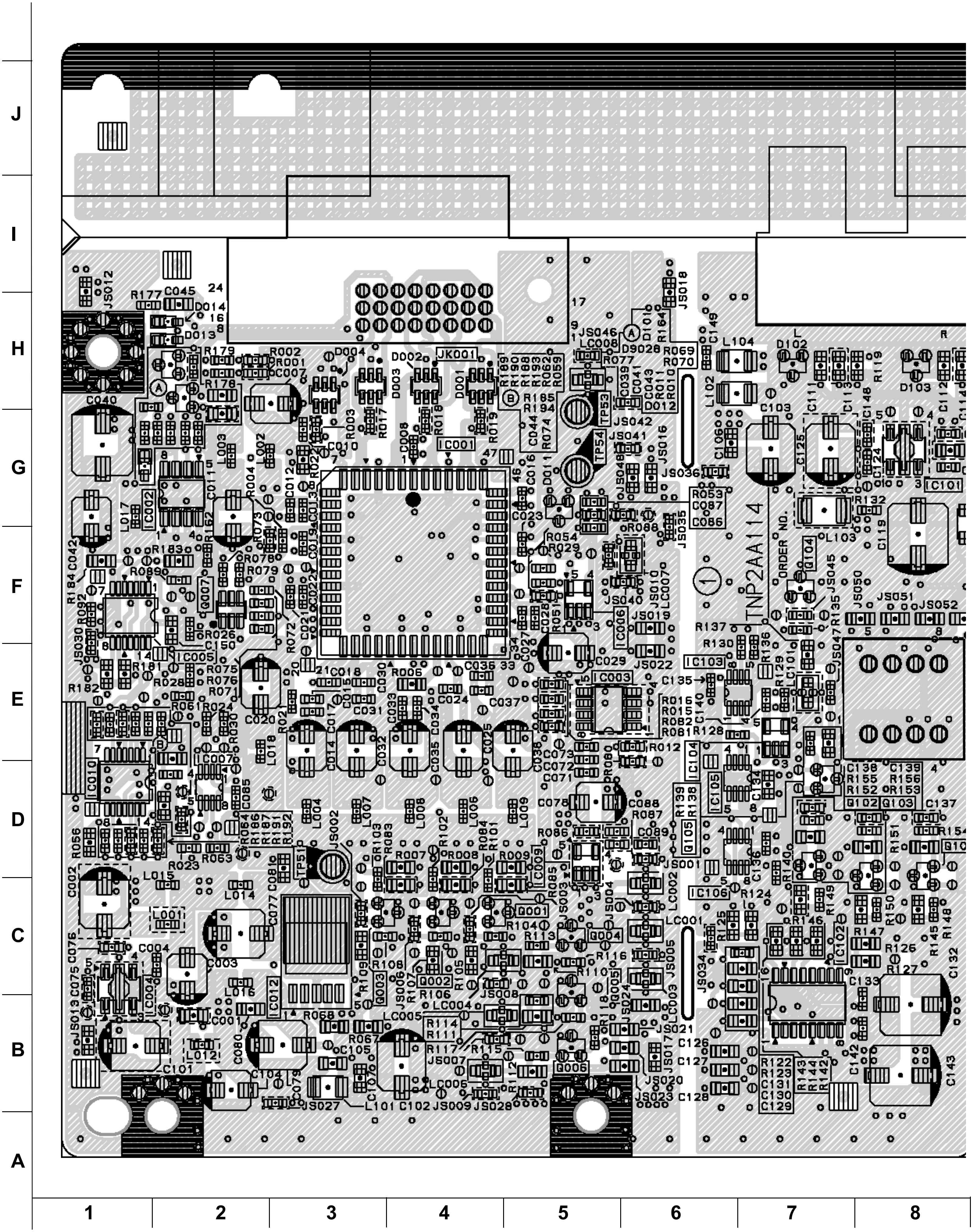

TV/VIDEO
S015
R085
ACTION
S016
CH▲
S014
CH▼
S013
R082
VOL▲
S012
R081
VOL▼
S011
POWER
S010
D081
TPK1
D082
R084
R083
R080
R087
R086
94V-0
KPC-M-PP
TNP2AA089
SEE REVERSE FOR ORDER NO.
①
K
D083
1
K3
5
K3


TEAMX5
94V-0
TNPA0615
SEE REVERSE
FOR ORDER NO.
M
C052
①
R
R072
R1
1
RM002
R073
C051
3

G-BOARD TNP2AA095 K-BOARD TNP2AA089 R-BOARD TNP2A0615 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
JK002
CR NO.5000
DV1
JS014
JS018
JK001
D004
D002
D003
D001
IC001
TP53
TP54
TP51
JS046
LC008
D101
R164
D9028
R059
R070
C149
L104
D102
D103
L102
R119
R120
C111
C112
C113
C114
C148
C120
C121
C118
C124
C125
IC101
L103
L105
C119
R132
Q104
JS045
JS047
JS050
JS051
JS052
JS053
R135
T001
TNP2AA114
ORDER NO.
IC003
IC006
IC103
IC104
IC105
IC106
IC102
C135
R137
R130
R136
R129
C101
R128
C134
C136
C138
C139
R155
R156
R152
R153
Q102
Q103
C137
R154
Q101
R151
R150
R149
R148
R145
R147
R146
R126
R127
C132
C133
C142
C143
R122
R123
C131
C130
C129
R143
R144
R142
JS015
R032
Q105
R139
R138
R140
R124
JS001
LC001
LC002
LC003
JS034
R125
JS005
JS021
JS017
JS020
JS023
C126
C127
C128
Q006
Q005
Q004
Q003
Q002
Q001
JS024
JS004
JS003
JS006
JS007
JS008
JS009
JS028
JS027
JS002
LC004
LC005
LC006
R114
R111
R117
R115
R112
R116
R110
R113
R104
R105
R106
R107
R108
R109
R068
R067
C105
C107
L101
C102
C079
R007
R008
R009
R103
R083
R102
R084
R101
R085
R086
R087
C009
C078
C088
C089
L004
L007
L008
L006
L009
C014
C032
C035
C025
C036
C073
C072
C071
R080
R012
R016
R015
R082
R081
C018
C015
C017
C030
C031
C033
C034
C024
C037
R006
C036
C029
JS022
JS019
JS040
JS010
LC007
R051
C028
C027
R054
R029
C023
R088
JS035
R053
C087
C086
JS036
JS048
JS041
JS042
JS016
C106
L106
C103
D011
C016
C044
R074
R185
R194
R189
R190
R188
R193
R062
R059
R077
C039
C041
DC043
R011
R010
DC012
R003
R017
R018
R019
C008
C010
R021
C012
C013
C019
C022
C021
R072
C011
R014
C007

DV-BOARD TOP-VIEW 2/2 TNP2AA114 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G



J
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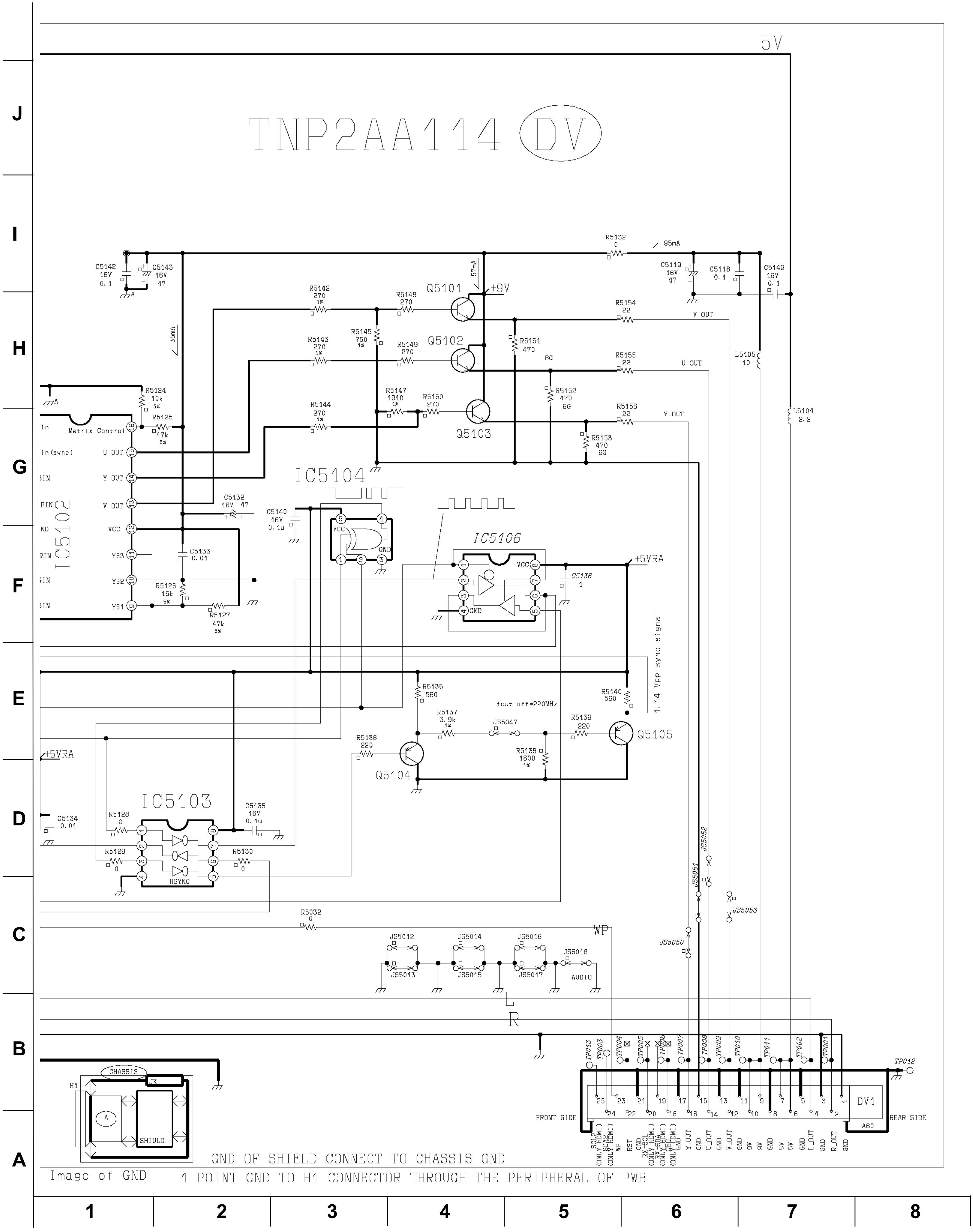
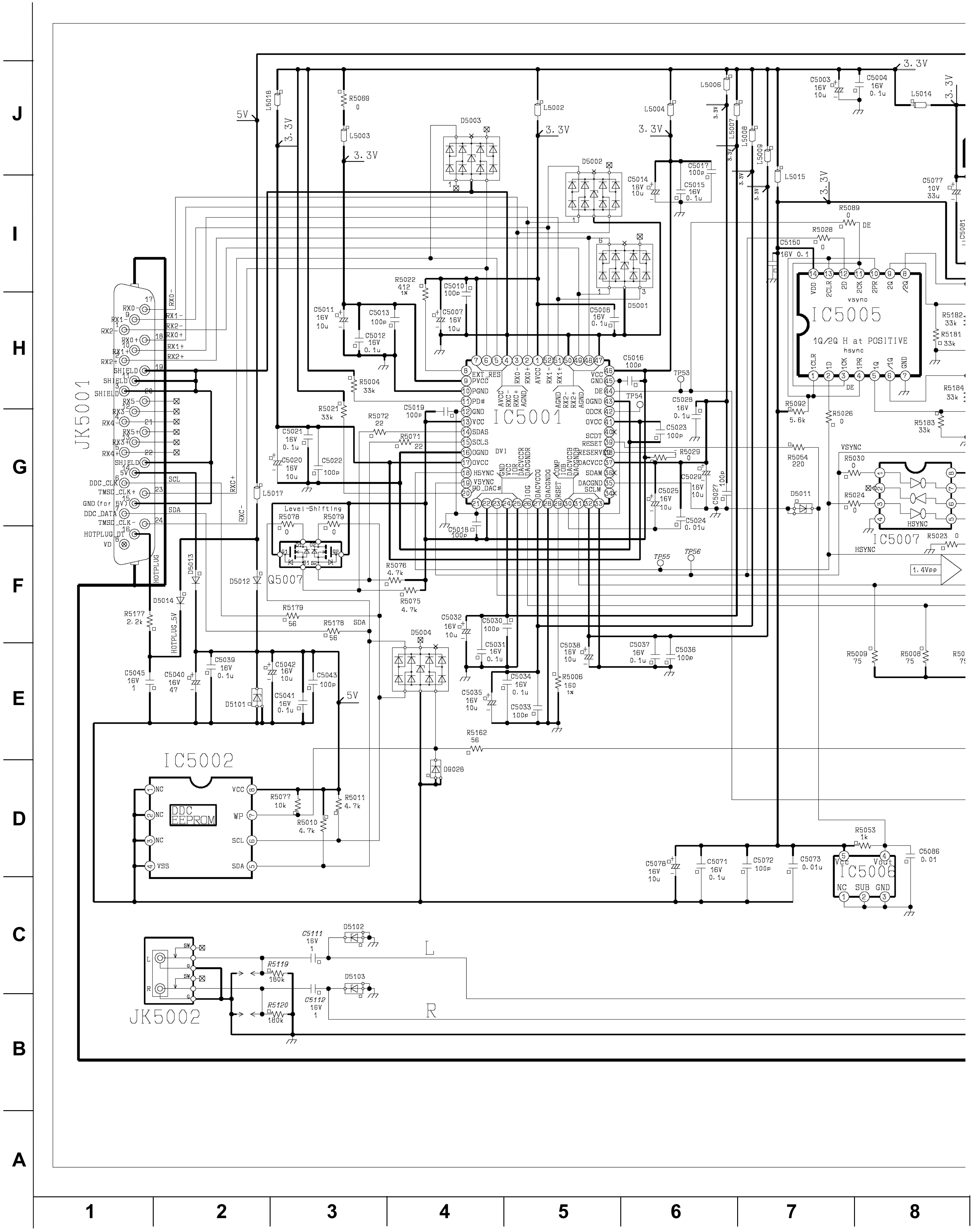
8
JS012
R177
C045
D014
D013
24
16
8
17
9
1
R179
R002
R001
C007
R178
D004
D002
JK001
D003
D001
R017
R018
R019
R003
C010
C008
IC001
R189
R190
R193
R062
R059
R185
R194
C044
R074
C016
D011
JS046
LC008
D9028
D101
R164
JS018
R069
R070
R077
C039
C041
DC043
R011
R010
D012
TP53
TP54
JS042
JS041
JS016
JS048
JS036
C149
L104
L102
C106
D102
D103
R119
C103
C111
C113
C125
C148
C124
C112
C114
IC101
R132
C119
L103
Q104
JS045
R135
JS050
JS051
JS052
JS047
ORDER NO.
TNP2AA114
C040
L003
L002
C011
IC002
R004
R162
R073
C012
C013
C019
C022
R022
L017
C042
R184
R183
R089
R092
Q007
R076
R079
R026
C150
R072
C021
JS030
IC005
R181
R182
R075
R076
R071
R028
R061
R024
R030
C020
R021
C018
C015
C017
C031
C030
R006
C036
C024
C037
C033
C034
C014
C032
C035
C025
C038
L018
C023
R054
R029
C028
R051
C027
C029
JS040
JS010
LC007
C006
JS019
JS022
IC003
R053
C087
C086
R088
JS035
R137
R130
R136
IC103
C135
R129
LC101
R016
R015
R082
R081
C140
R128
R012
C073
C072
C071
R080
C078
C088
R087
C089
R086
JS001
IC104
IC105
C134
R139
R138
Q105
C136
IC106
R124
C138
R155
R152
C139
R156
R153
Q102
Q103
C137
R151
R154
R140
R149
R150
R148
R146
R147
IC102
R145
R126
R127
C132
C133
IC010
IC007
C085
R064
R186
R187
R191
R192
R056
R023
R063
JS002
L004
L007
L008
L006
L009
R103
R083
R102
R084
R101
TP51
R007
R008
R009
C009
R085
JS003
JS004
LC002
LC001
C002
L015
L014
L001
C081
C077
C003
Q001
R104
R113
Q004
R116
R110
Q005
JS005
C076
C004
C075
JS013
IC004
L016
C001
C012
R109
R108
Q003
JS006
R107
Q002
R106
R105
JS008
LC004
LC005
R068
R114
R111
R117
R115
R118
JS024
LC003
JS021
JS034
R125
C126
C127
JS017
R067
C105
C107
JS007
LC006
R112
Q006
JS020
JS023
C128
L012
C080
C101
C104
C079
JS027
L101
C102
JS009
JS028
R122
R123
C131
C130
C129
R143
R144
R142
C142
C143

DV-BOARD TOP-VIEW 1/2 TNP2AA114 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


TNP2AA114 DV
5V
R5132 0
95mA
C5142 16V 0.1
C5143 16V 47
C5119 16V 47
C5118 0.1
C5149 16V 0.1
Q5101
+9V
57mA
R5142 270 1%
R5148 270
R5154 22
V OUT
R5143 270 1%
R5145 750 1%
R5149 270
Q5102
R5151 470
6G
R5155 22
U OUT
L5105 10
35mA
R5124 10k 5%
R5125 47k 5%
R5144 270 1%
R5147 1910 1%
R5150 270
Q5103
R5152 470 6G
R5156 22
Y OUT
R5153 470 6G
L5104 2.2
Matrix Control
U OUT
Y OUT
V OUT
VCC
YS3
YS2
YS1
In (sync)
IC5102
C5132 16V 47
C5133 0.01
R5126 15k 5%
R5127 47k 5%
IC5104
C5140 16V 0.1u
VCC
GND
IC5106
VCC
GND
+5VRA
C5136 1
1.14 Vpp sync signal
R5135 560
R5137 3.9k 1%
JS5047
fcut off=220MHz
R5139 220
R5140 560
Q5105
R5136 220
Q5104
R5138 1600 1%
+5VRA
IC5103
C5134 0.01
R5128 0
C5135 16V 0.1u
R5129 0
R5130 0
HSYNC
R5032 0
WP
JS5012
JS5013
JS5014
JS5015
JS5016
JS5017
JS5018
AUDIO
L
R
JS5050
JS5051
JS5052
JS5053
CHASSIS
JK
H1
A
SHIULD
TP013 TP003 TP004 TP005 TP006 TP007 TP008 TP009 TP010 TP011 TP002 TP001 TP012
FRONT SIDE
REAR SIDE
DV1
A60
SCL2 (ONLY HDMI)
SDA2 (ONLY HDMI)
WP
RST
GND
RX-SCL (ONLY HDMI)
RX-SDA (ONLY HDMI)
CEC (ONLY HDMI)
GND
Y_OUT
GND
U_OUT
GND
V_OUT
GND
9V
9V
5V
5V
GND
L_OUT
GND
R_OUT
GND
GND OF SHIELD CONNECT TO CHASSIS GND
Image of GND
1 POINT GND TO H1 CONNECTOR THROUGH THE PERIPHERAL OF PWB
J I H G F E D C B A
1 2 3 4 5 6 7 8



J
I
H
G
F
E
D
C
B
A
1
2
3
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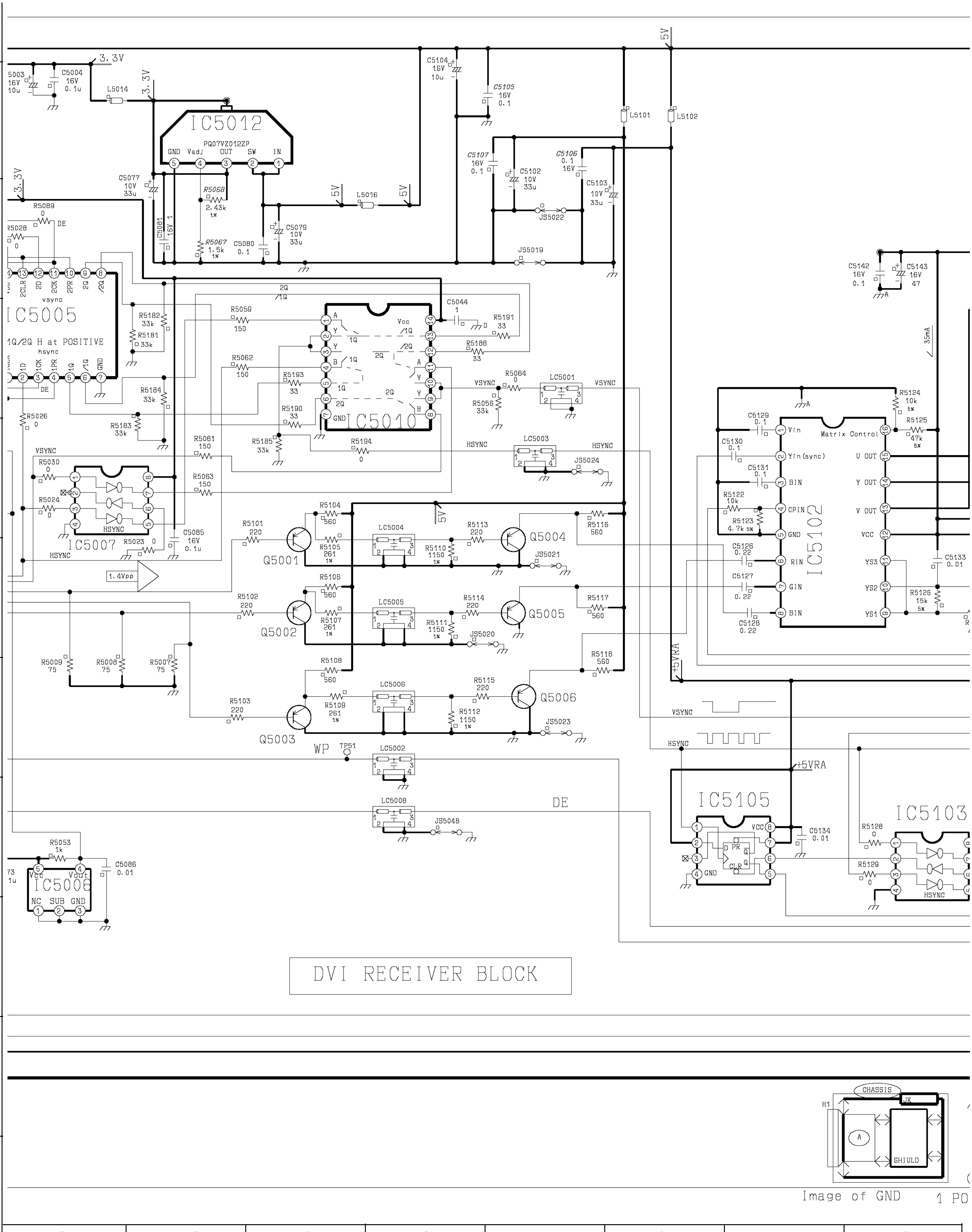
5
6
7
8
JK5001
IC5001
DVI
IC5002
DDC EEPROM
IC5005
1Q/2Q H at POSITIVE
IC5007
HSYNC
VSYNC
IC5006
JK5002
Q5007
Level-Shifting
D5001
D5002
D5003
D5004
D5011
D5012
D5013
D5014
D5101
D5102
D5103
D9026
L5002
L5003
L5004
L5006
L5007
L5008
L5009
L5014
L5015
L5017
L5018
TP53
TP54
TP55
TP56
5V
3.3V
1.4Vpp
L
R
RX0+
RX0-
RX1+
RX1-
RX2+
RX2-
RXC+
RXC-
SCL
SDA
HOTPLUG
HOTPLUG_5V
SHIELD
DDC_CLK
DDC_DATA
TMSD_CLK+
TMSD_CLK-
GND (for 5V)
HOTPLUG_DT
VCC
WP
VSS
NC

**DV-BOARD 1/3 TNP2AA114 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**

J
I
H
G
F
E
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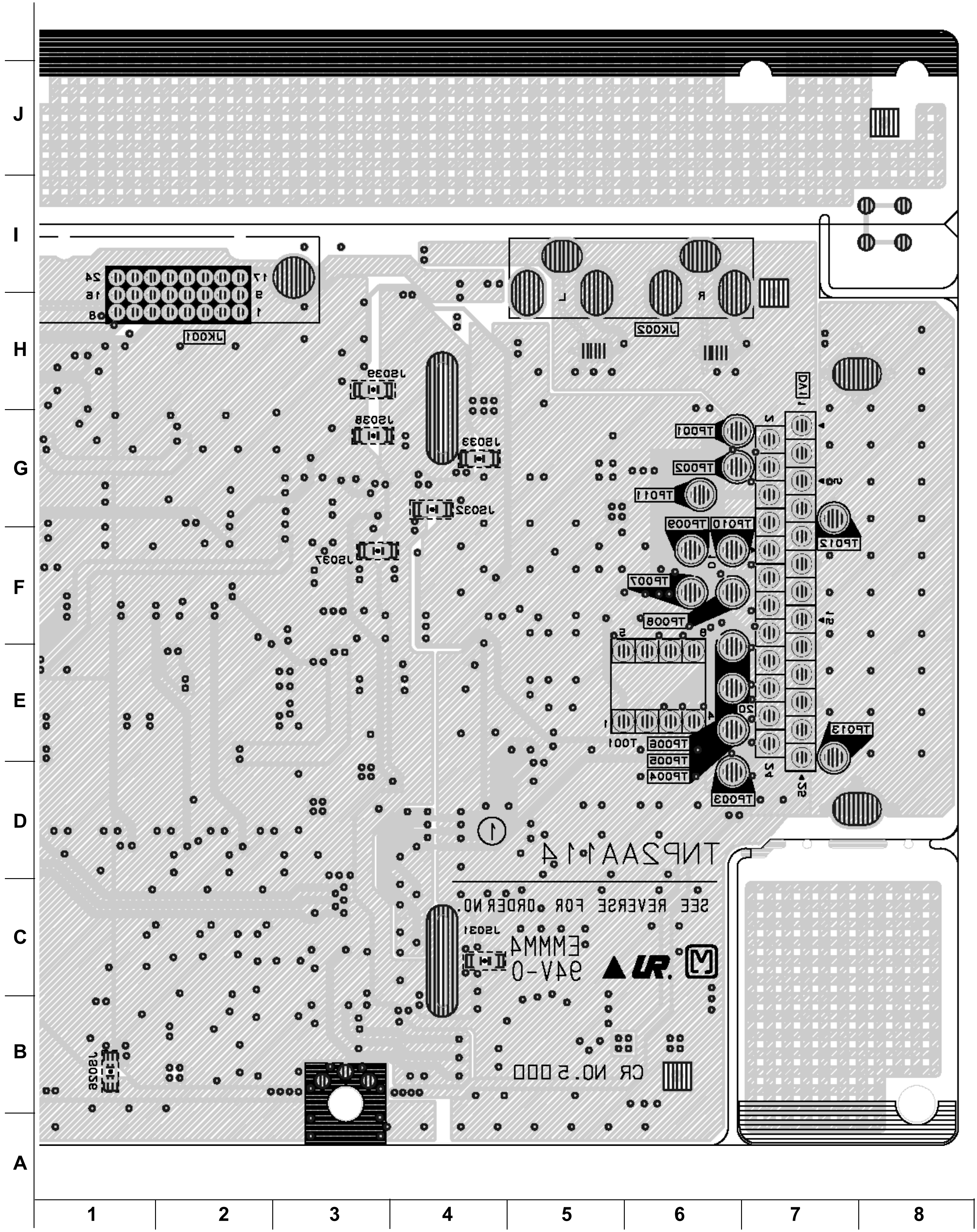
C
B
A
1
2
3
4
5
6
7
8
3.3V
5V
IC5012
PQ07VZ012ZP
GND
Vadj
OUT
SW
IN
L5014
L5016
L5101
L5102
C5004 16V 0.1u
C5077 10V 33u
C5081 16V 1
C5079 10V 33u
C5080 0.1
C5104 16V 10u
C5105 16V 0.1
C5107 16V 0.1
C5102 10V 33u
C5106 0.1 16V
C5103 10V 33u
R5068 2.43k 1%
R5067 1.5k 1%
JS5022
JS5019
R5089 0
DE
R5028 0
IC5005
1Q/2Q H at POSITIVE
vsync
hsync
2CLR
2D
2CK
2PR
2Q
1D
1CK
1PR
1Q
GND
R5182 33k
R5181 33k
R5184 33k
R5183 33k
R5026 0
R5059 150
R5062 150
R5193 33
R5190 33
R5185 33k
IC5010
Vcc
C5044 1
R5191 33
R5186 33
R5064 0
R5056 33k
LC5001
VSYNC
HSYNC
LC5003
R5194 0
JS5024
R5061 150
R5063 150
R5030 0
R5024 0
IC5007
R5023 0
C5085 16V 0.1u
1.4Vpp
R5101 220
R5102 220
R5103 220
Q5001
Q5002
Q5003
R5104 560
R5105 261 1%
R5106 560
R5107 261 1%
R5108 560
R5109 261 1%
LC5004
LC5005
LC5006
R5110 1150 1%
R5111 1150 1%
R5112 1150 1%
R5113 220
R5114 220
R5115 220
Q5004
Q5005
Q5006
JS5021
JS5020
JS5023
R5116 560
R5117 560
R5118 560
R5009 75
R5008 75
R5007 75
WP
TP51
LC5002
LC5008
JS5048
R5053 1k
IC5006
Vcc
Vout
NC
SUB
C5086 0.01
DVI RECEIVER BLOCK
C5142 16V 0.1
C5143 16V 47
35mA
R5124 10k 5%
R5125 47k 5%
IC5102
Matrix Control
C5129 0.1
C5130 0.1
C5131 0.1
Vin
Yin(sync)
BIN
CPIN
RIN
GIN
U OUT
Y OUT
V OUT
VCC
YS3
YS2
YS1
R5122 10k
R5123 4.7k 5%
C5126 0.22
C5127 0.22
C5128 0.22
C5133 0.01
R5126 15k 5%
+5VRA
IC5105
PR
CLR
C5134 0.01
IC5103
R5128 0
R5129 0
CHASSIS
JK
H1
SHIULD
Image of GND
1 PO


J
I
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D
C
B
A
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3
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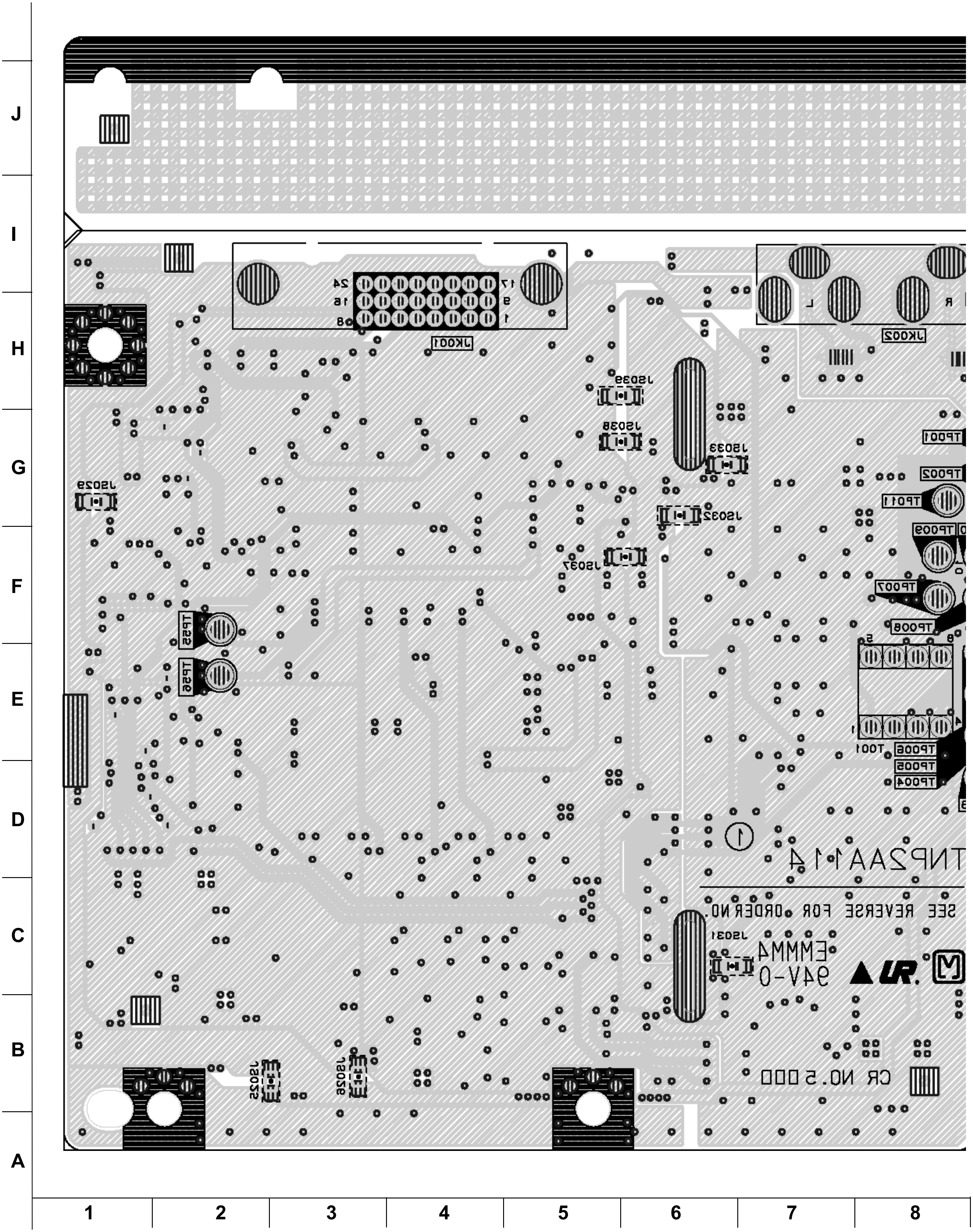
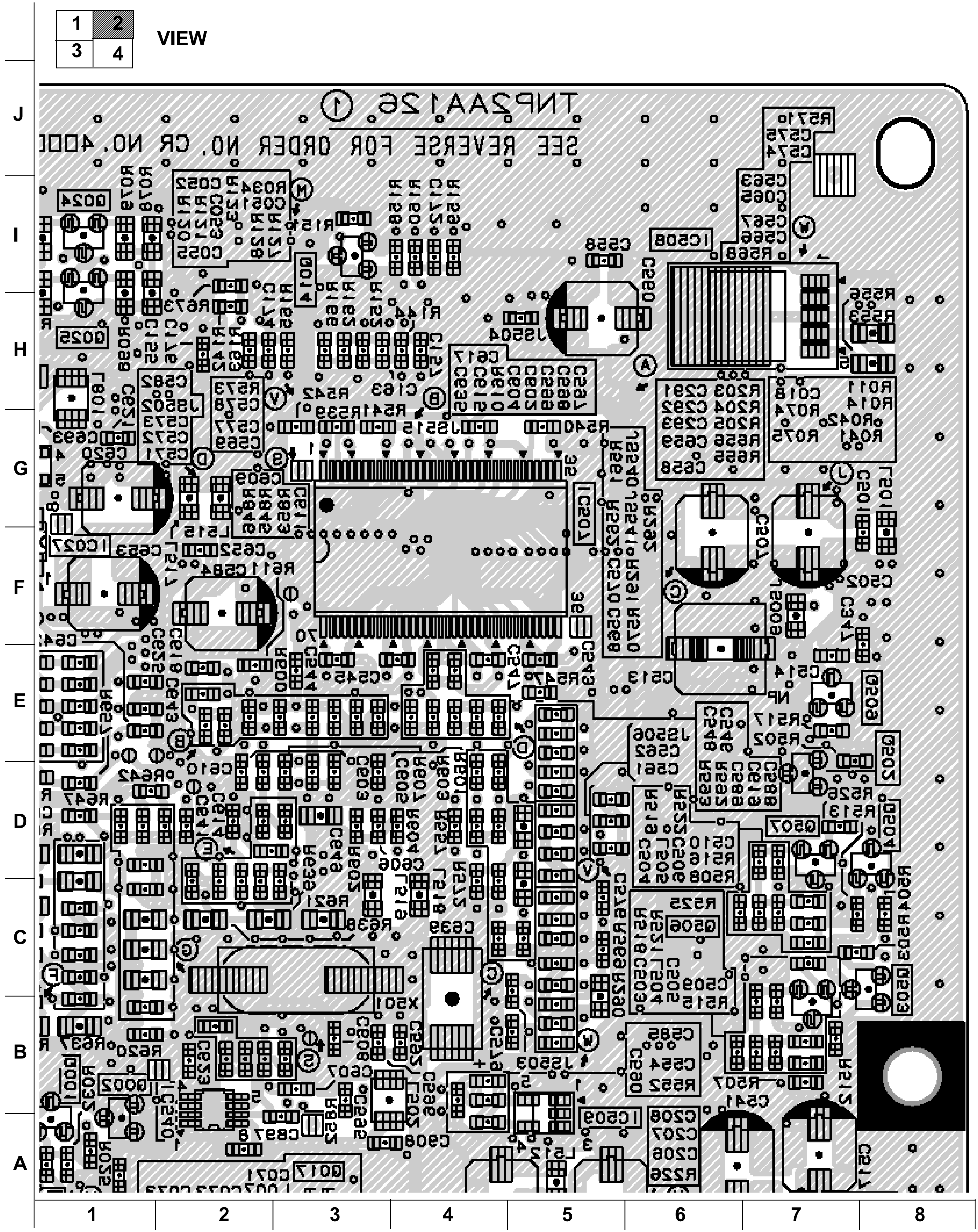
5
6
7
8
JK001
JK002
JS039
JS038
JS033
JS032
JS037
JS031
JS026
TP001
TP002
TP003
TP004
TP005
TP006
TP007
TP008
TP009
TP010
TP011
TP012
TP013
T001
DA1
TNP2AA114
SEE REVERSE FOR ORDER NO.
EMMM4
94V-0
CR NO.5000

**DV-BOARD BOTTOM-VIEW 2/2 TNP2AA114 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
JK001
JK002
24
16
8
17
9
1
L
R
JS039
JS038
JS033
JS032
JS037
JS029
JS031
JS025
JS026
TP001
TP002
TP011
TP009
TP007
TP008
TP006
TP005
TP004
T001
TP55
TP56
TNP2AA114
SEE REVERSE FOR ORDER NO.
EMMM4
94V-0
CR NO.5000

**DV-BOARD BOTTOM-VIEW 1/2 TNP2AA114 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**



1
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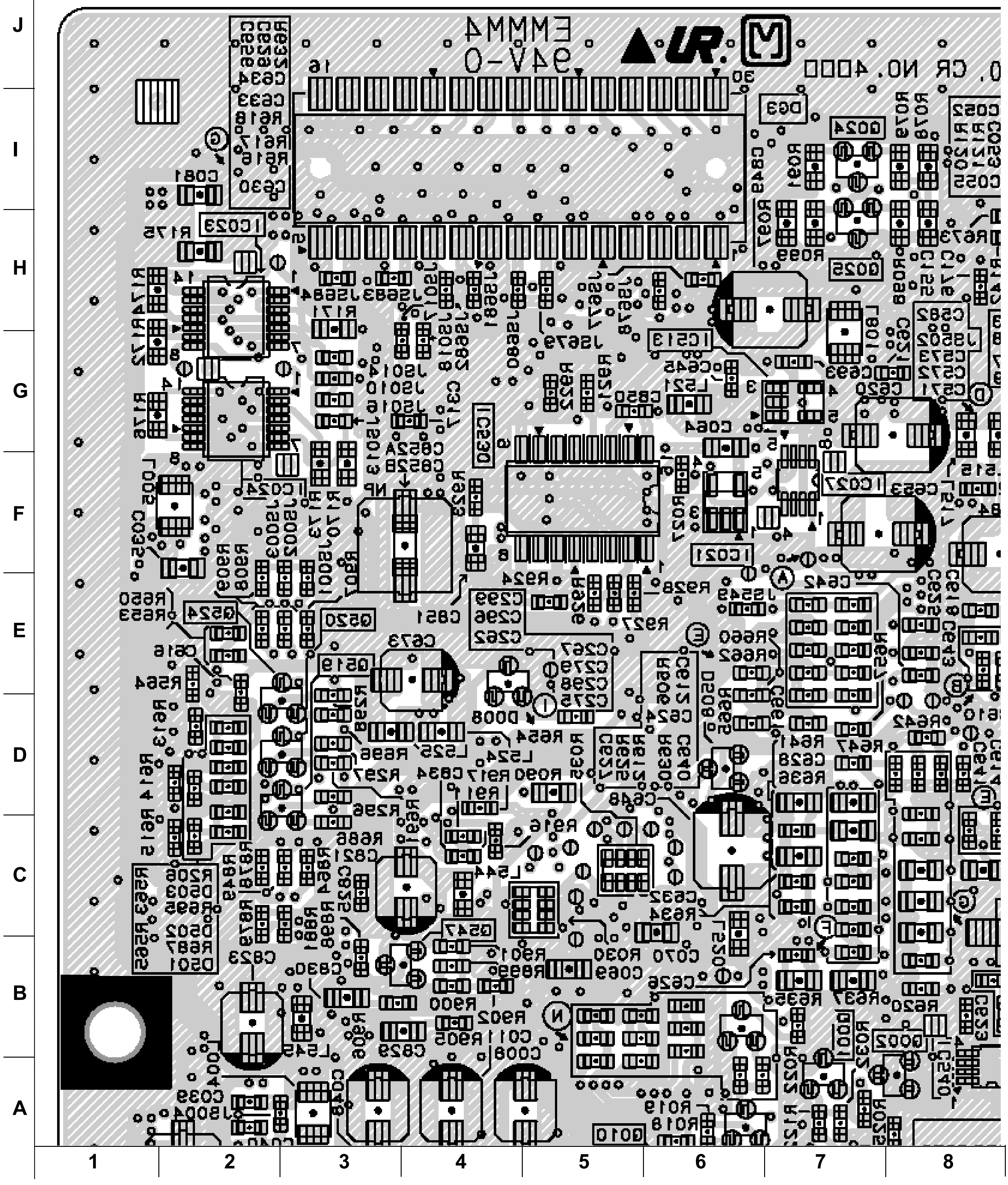
VIEW
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
TNP2AA126 ①
SEE REVERSE FOR ORDER NO. CR NO. 400
IC501
IC508
IC509
IC507
X501
JS504
JS503
JS515
CS60
CS07
CS13
CS01
CS41
CS11

**DG-BOARD TOP-VIEW 2/4 TNP2AA126 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**

| 1 | 2 |
|---|---|
| 3 | 4 |

**VIEW**


J
I
H
G
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D
C
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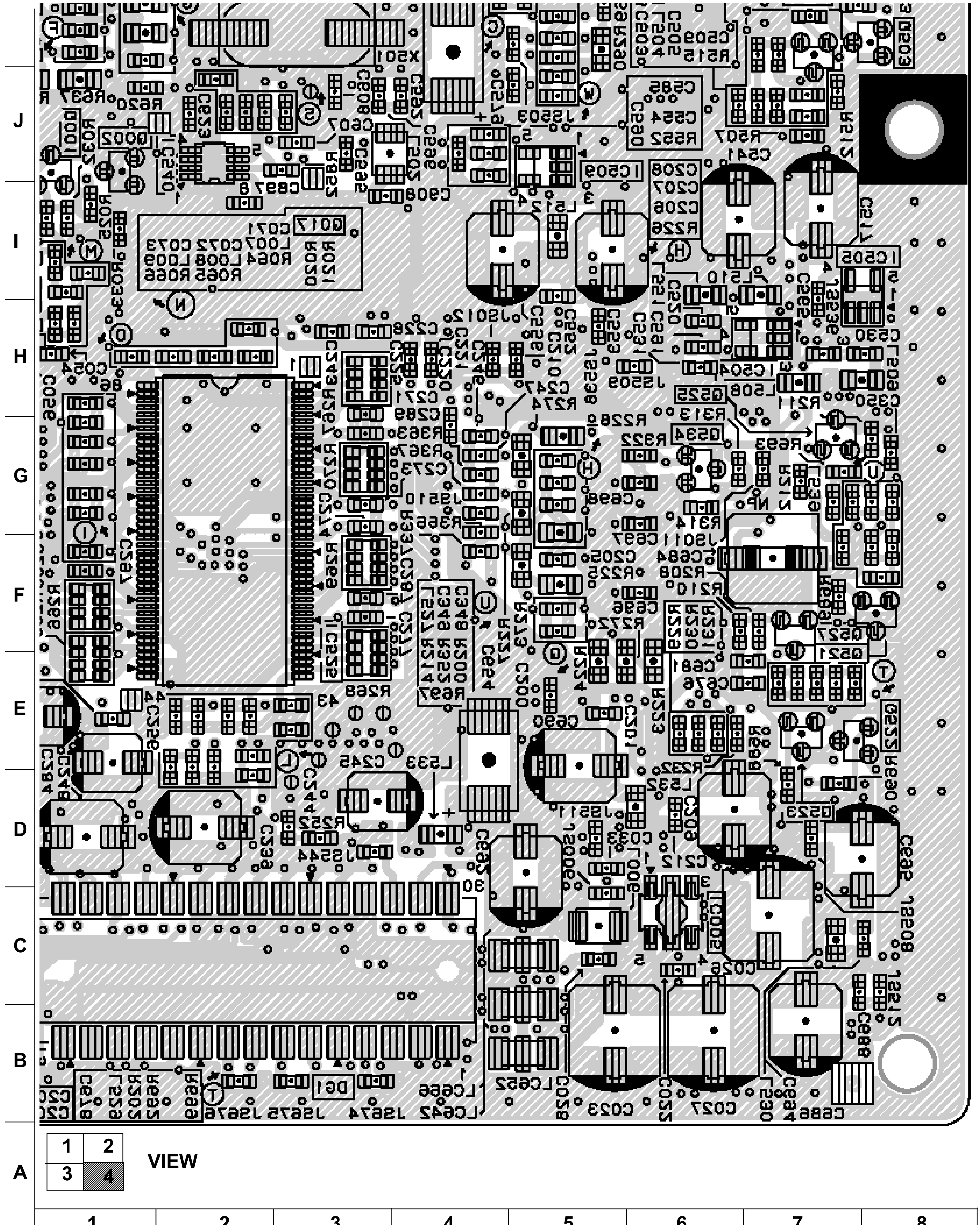
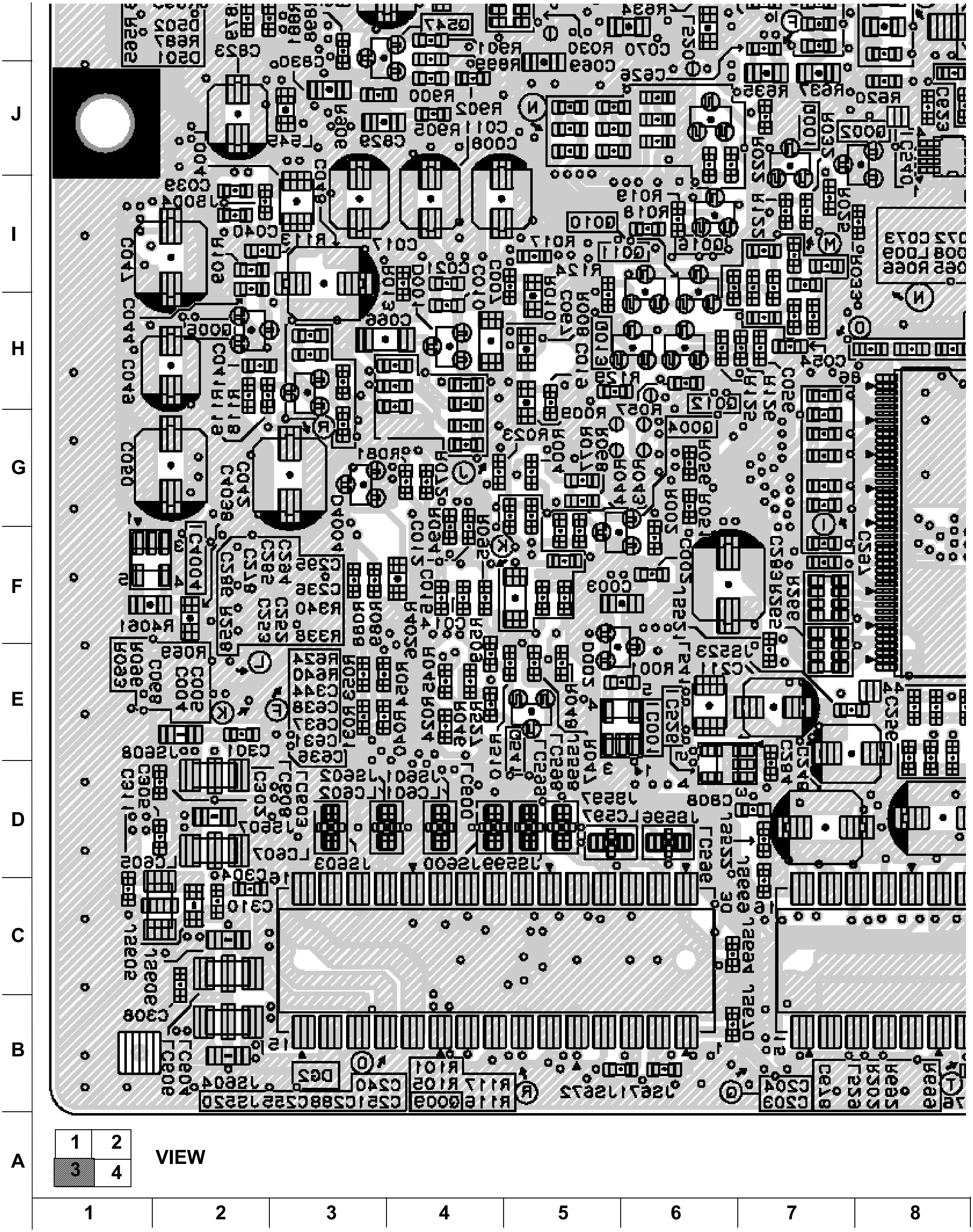
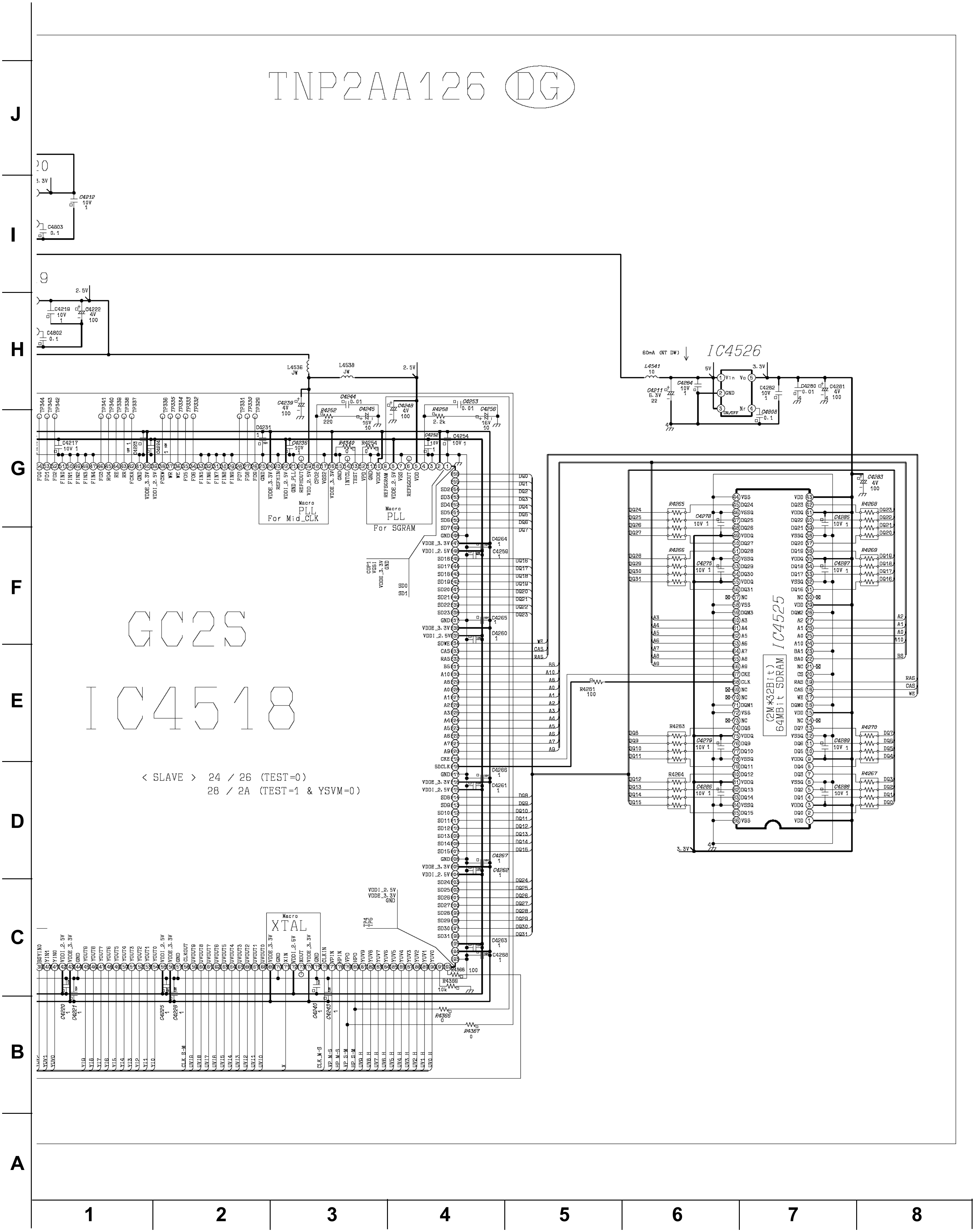
**DG-BOARD TOP-VIEW 1/4 TNP2AA126 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
VIEW
1
2
3
4

DG-BOARD TOP-VIEW 4/4 TNP2AA126 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


J
I
H
G
F
E
D
C
B
A
1
2
3
4
VIEW
1
2
3
4
5
6
7
8

DG-BOARD TOP-VIEW 3/4 TNP2AA126 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


TNP2AA126 (DG)
GC2S
IC4518
IC4525
(2M×32Bit) 64MBit SDRAM
IC4526
< SLAVE > 24 / 26 (TEST=0)
28 / 2A (TEST=1 & YSVM=0)
Macro PLL For Mid_CLK
Macro PLL For SGRAM
Macro XTAL
60mA (NT DW)
L4541 10
L4536 JW
L4538 JW
2.5V
3.3V
5V
Vin
Vo
GND
ON/OFF
Nr
C4211 6.3V 22
C4264 10V 1
C4282 10V 1
C4280 0.01
C4281 4V 100
C4808 0.1
C4283 4V 100
C4212 10V 1
C4803 0.1
C4218 10V 1
C4222 4V 100
C4802 0.1
C4239 4V 100
C4244 0.01
R4252 220
C4245 16V 10
C4248 4V 100
C4253 0.01
R4258 2.2k
C4256 16V 10
C4217 10V 1
C4231 1
C4236 10V 1
R4340 0
R4254 0
C4252 10V 1
C4254 10V 1
C4264 1
C4259 1
C4265 1
C4260 1
C4266 1
C4261 1
C4267 1
C4262 1
C4263 1
C4268 1
R4366 100
R4369 10k
R4365 0
R4367 0
C4220 1
C4221 1
C4225 1
C4228 1
C4240 1
C4243 1
R4261 100
R4265
R4266
R4263
R4264
R4268
R4269
R4270
R4267
C4278 10V 1
C4275 10V 1
C4279 10V 1
C4286 10V 1
C4285 10V 1
C4287 10V 1
C4289 10V 1
C4288 10V 1
TP344 TP343 TP342 TP341 TP340 TP339 TP338 TP337 TP336 TP335 TP334 TP333 TP332 TP331 TP330 TP329
TP4 TP5
CDP1 VGSI VDDE_3.3V GND
SD0 SD1
VDDI_2.5V VDDE_3.3V GND
DQ0 … DQ31
SD2 … SD31
A0 … A10
BS
RAS CAS WE
CKE SDCLK
VSS DQ24 VSSQ DQ25 DQ26 VDDQ DQ27 DQ28 VSSQ DQ29 DQ30 VDDQ DQ31 NC VSS DQM3 A3 A4 A5 A6 A7 A8 A9 CKE CLK NC NC DQM1 VSS NC DQ8 VDDQ DQ9 DQ10 VSSQ DQ11 DQ12 VDDQ DQ13 DQ14 VSSQ DQ15 VSS
VDD DQ23 VDDQ DQ22 DQ21 VSSQ DQ20 DQ19 VDDQ DQ18 DQ17 VSSQ DQ16 NC VDD DQM2 A2 A1 A0 A10 BA1 BA0 NC CS RAS CAS WE DQM0 VDD NC DQ7 VSSQ DQ6 DQ5 VDDQ DQ4 DQ3 VSSQ DQ2 DQ1 VDDQ DQ0 VDD
J
I
H
G
F
E
D
C
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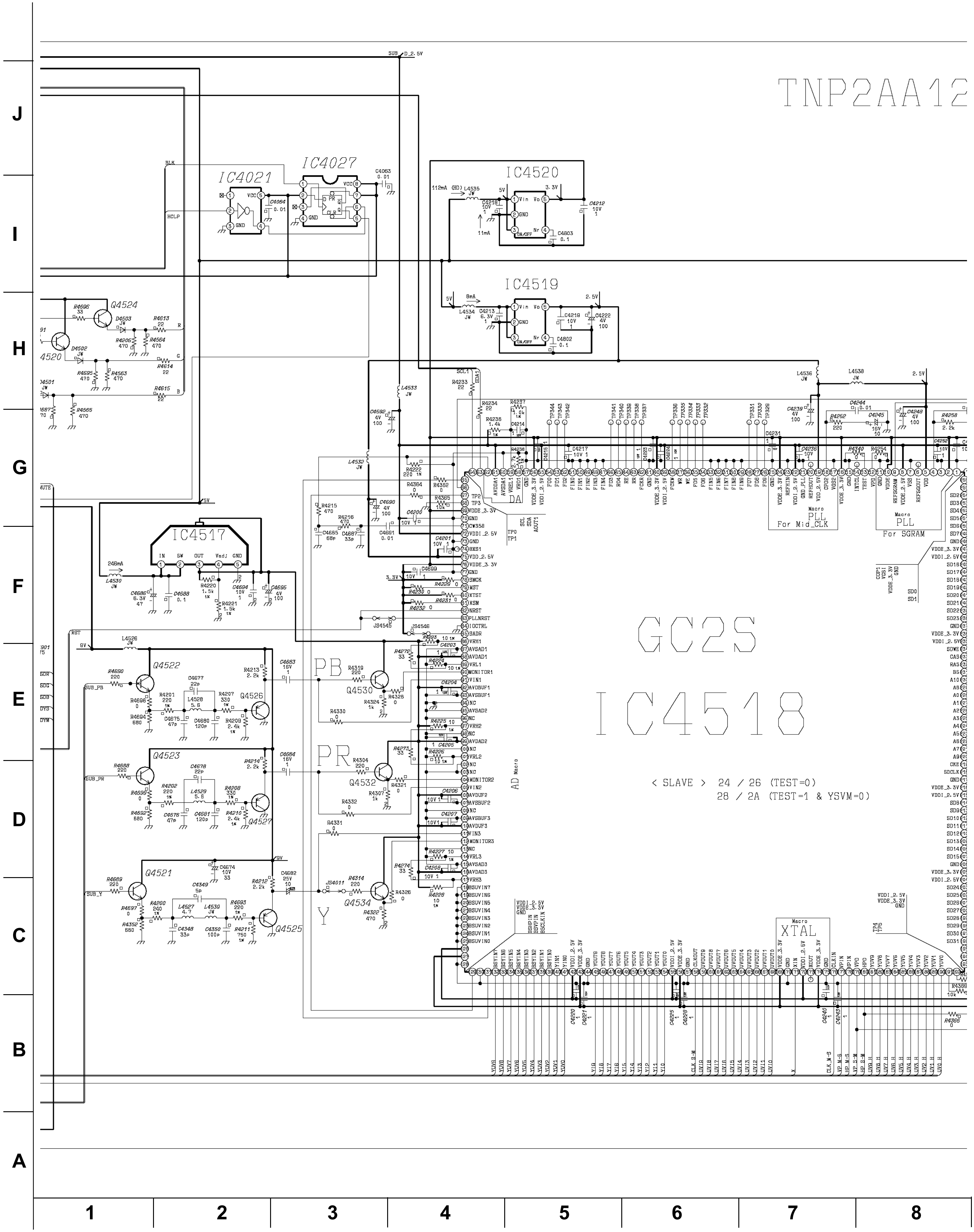
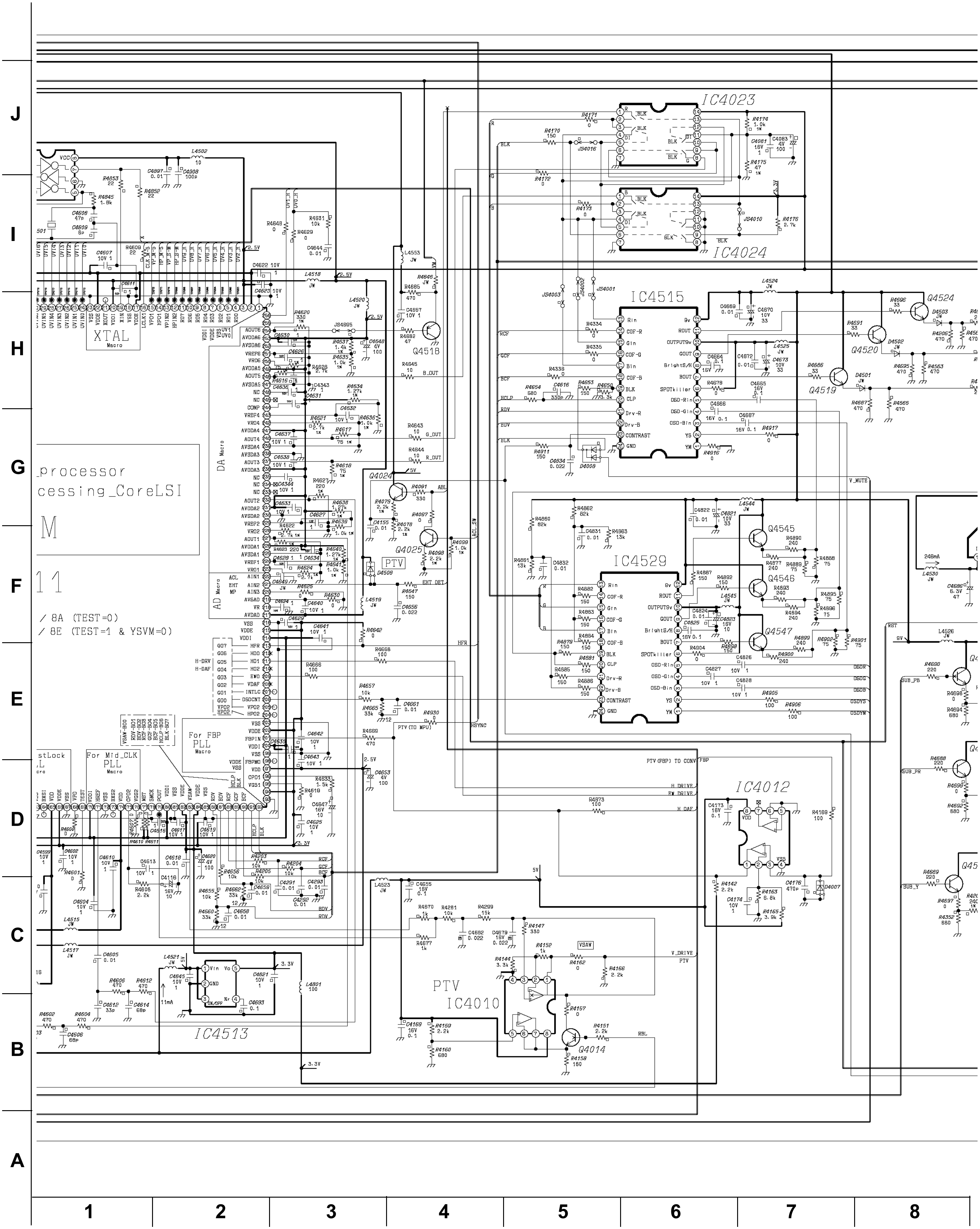
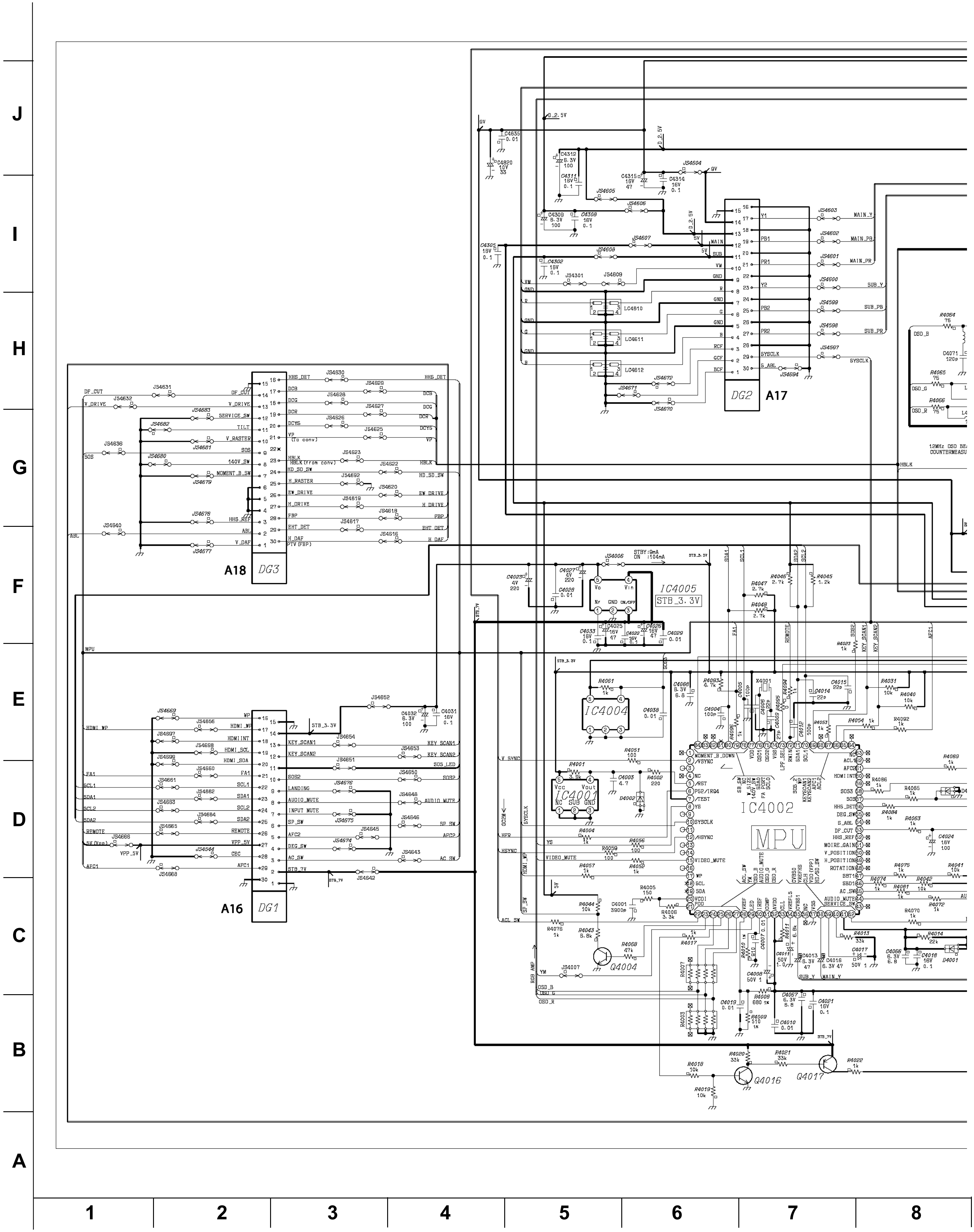
8

DG-BOARD 6/6 TNP2AA126 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G

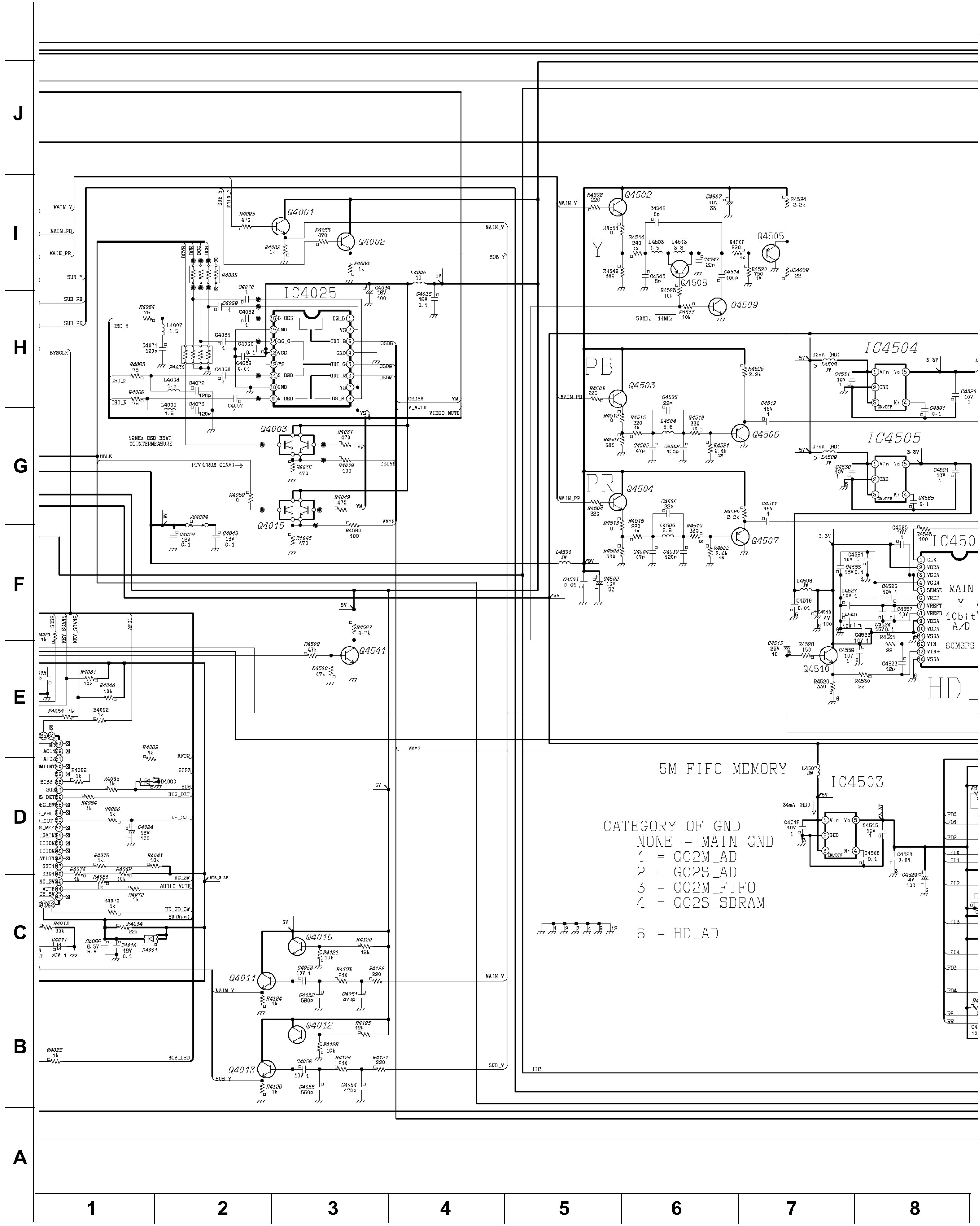

TNP2AA12
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
SUB_D_2.5V
IC4021
IC4027
IC4520
IC4519
IC4517
IC4518
GC2S
< SLAVE > 24 / 26 (TEST=0)
28 / 2A (TEST=1 & YSVM=0)
AD Macro
DA
Macro PLL For Mid_CLK
Macro PLL For SGRAM
Macro XTAL
Q4524
Q4522
Q4523
Q4521
Q4525
Q4526
Q4527
Q4530
Q4532
Q4534
PB
PR
Y
SUB_PB
SUB_PR
SUB_Y
BLK
HCLP
5V
3.3V
2.5V
9V
RST
112mA (HD) L4535 JW
11mA
8mA
246mA
JS4545
JS4546
JS4011
VCC
GND
Vin Vo
ON/OFF
Nr
IN SW OUT Vadj GND
TP0
TP1
SCL
SDA
ACUT1

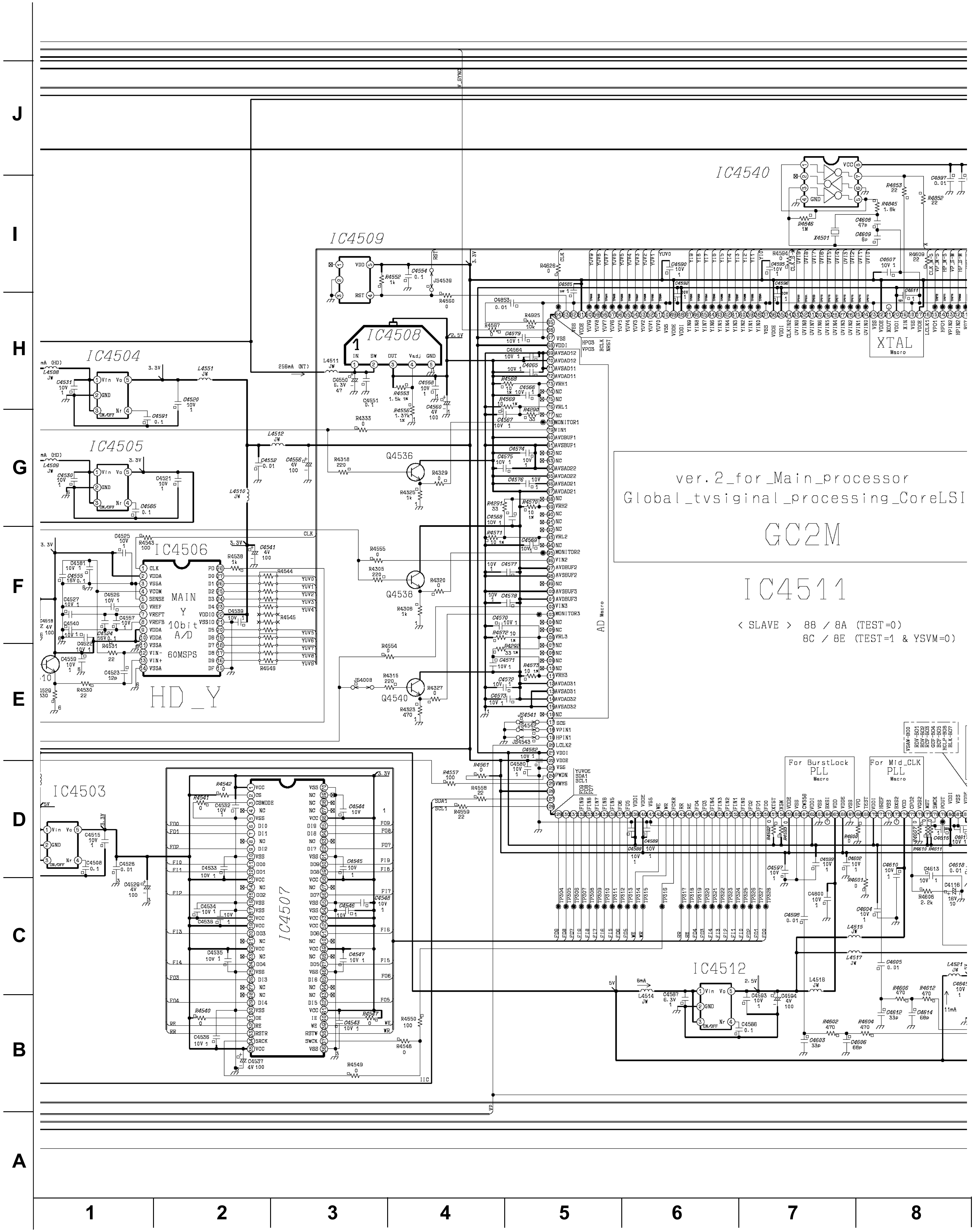

IC4023
IC4024
IC4515
IC4529
IC4012
IC4010
IC4513
PTV
XTAL
DA Macro
AD Macro
For FBP PLL Macro
For Mid_CLK PLL Macro
_processor
cessing_CoreLSI
M
11
/ 8A (TEST=0)
/ 8E (TEST=1 & YSVM=0)
Q4518
Q4024
Q4025
Q4014
Q4524
Q4520
Q4519
Q4545
Q4546
Q4547
D4008
D4509
D4007
PTV(FBP) TO CONV FBP
H DRIVE
EW DRIVE
H DAF
V_DRIVE
V_MUTE
HSYNC
PTV(TO MPU)
EHT DET
HFR
RBL
VSAW
B_OUT
G_OUT
R_OUT
ABL
ACL_SW
SUB_PB
SUB_PR
SUB_Y
OSDR
OSDG
OSDB
OSDYS
OSDYM
2.5V
3.3V
5V
9V
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8

**DG-BOARD 4/6 TNP2AA126 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
A18
DG3
A17
DG2
A16
DG1
IC4005
STB_3.3V
IC4004
IC4001
IC4002
MPU
Q4004
Q4016
Q4017
LC4610
LC4611
LC4612
X4001
D4001
D4002
STBY:9mA
ON :104mA
12MHz OSD BEAT COUNTERMEASURE
HHS_DET
DCB
DCG
DCR
DCYS
VP (To conv)
HBLK (from conv)
HD_SD_SW
H_RASTER
EW_DRIVE
H_DRIVE
FBP
EHT_DET
H_DAF
PTV (FBP)
DF_CUT
V_DRIVE
SERVICE_SW
TILT
V_RASTER
SOS
140V_SW
MOMENT_B_SW
HHS_REF
ABL
V_DAF
WP
HDMI_WP
HDMIINT
HDMI_SCL
HDMI_SDA
FA1
SCL1
SDA1
SCL2
SDA2
REMOTE
5V(Vpp)
VPP_5V
CEC
AFC1
KEY_SCAN1
KEY_SCAN2
SOS_LED
SOS2
LANDING
AUDIO_MUTE
INPUT_MUTE
SP_SW
AFC2
DEG_SW
AC_SW
STB_7V
MAIN_Y
MAIN_PB
MAIN_PR
SUB_Y
SUB_PB
SUB_PR
SYSCLK
S_ABL
YM
RCF
GCF
BCF
OSD_B
OSD_G
OSD_R
V_SYNC
HSYNC
VIDEO_MUTE
MPU
D_2.5V
9V
5V

DG-BOARD 1/6 TNP2AA126 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
MAIN_Y
MAIN_PB
MAIN_PR
SUB_Y
SUB_PB
SUB_PR
SYSCLK
Q4001
Q4002
R4025 470
R4032 1k
R4033 470
R4034 1k
L4005 10
C4034 16V 100
C4035 16V 0.1
5V
R4035
IC4025
OSD_B
OSD_G
OSD_R
R4064 75
R4065 75
R4066 75
L4007 1.5
L4008 1.5
L4009 1.5
C4071 120p
C4072 120p
C4073 120p
R4030
B OSD
GND
G OSD
DG_G
VCC
YS
R OSD
DG_B
YS
OUT B
GND
OUT G
OUT R
DG_R
OSDB
OSDG
OSDR
OSDYM
V_MUTE
VIDEO_MUTE
YM
12MHz OSD BEAT COUNTERMEASURE
Q4003
Q4015
R4037 470
R4036 470
R4039 100
OSDYS
R4049 470
R4050 0
R4060 100
R1045 470
VMYS
PTV (FROM CONV)
HBLK
JS4004
C4039 16V 0.1
C4040 16V 0.1
Q4502
R4502 220
C4507 10V 33
R4524 2.2k
C4346 5p
R4511 0
R4514 240
L4503 1.5
L4513 3.3
C4347 22p
R4506 220
Q4505
R4349 680
C4345 5p
Q4508
C4514 100p
R4520 750
JS4009 22
R4523 10k
R4517 10k
Q4509
30MHz
14MHz
Y
PB
PR
Q4503
R4503 220
R4525 2.2k
C4505 22p
R4515 220
L4504 5.6
R4518 330
C4512 16V 1
Q4506
R4507 680
C4503 47p
C4509 120p
R4521 2.4k
Q4504
R4504 220
C4506 22p
R4526 2.2k
C4511 16V 1
R4516 220
L4505 5.6
R4519 330
Q4507
R4508 680
C4504 47p
C4510 120p
R4522 2.4k
L4501 JW
C4501 0.01
C4502 10V 33
IC4504
L4508 JW
32mA (HD)
3.3V
C4531 10V 1
Vin Vo
GND
ON/OFF
Nr
C4520 10V 1
C4591 0.1
IC4505
L4509 JW
87mA (HD)
C4530 10V 1
C4521 10V 1
C4565 0.1
IC450
C4525 10V 1
R4543 100
CLK
VDDA
VSSA
VCOM
SENSE
VREF
VREFT
VREFB
VDDA
VSSA
VSSA
VIN-
VIN+
VSSA
MAIN
Y
10bit
A/D
60MSPS
HD
L4506 JW
C4516 0.01
C4513 25V 10
R4528 150
Q4510
R4529 330
R4530 22
R4531 22
C4523 12p
Q4541
R4509 47k
R4510 47k
R4527 4.7k
R4031 10k
R4040 10k
R4054 1k
R4092 1k
KEY_SCAN1
KEY_SCAN2
AFC1
R4089 1k
AFC2
SOS3
R4086 1k
R4085 1k
D4000
SOS
HHS_DET
R4084 1k
R4063 1k
DF_CUT
C4024 16V 100
R4075 1k
R4041 10k
R4074 1k
R4042 10k
AC_SW
R4061 1k
AUDIO_MUTE
R4072 1k
R4070 1k
HD_SD_SW
5V (Vpp)
STB_3.3V
R4013 33k
R4014 22k
C4017 50V 1
C4066 6.3V 6.8
C4018 16V 0.1
D4001
Q4010
Q4011
R4120 12k
R4121 10k
C4053 10V 1
R4123 240
R4122 220
R4124 1k
C4052 560p
C4051 470p
MAIN_Y
Q4012
Q4013
R4125 12k
R4126 10k
C4056 10V 1
R4128 240
R4127 220
R4129 1k
C4055 560p
C4054 470p
SUB_Y
R4022 1k
SOS_LED
IIC
5M_FIFO_MEMORY
L4507 JW
IC4503
34mA (HD)
C4519 10V 1
C4515 10V 1
C4508 0.1
C4528 0.01
C4529 4V 100
CATEGORY OF GND
NONE = MAIN GND
1 = GC2M_AD
2 = GC2S_AD
3 = GC2M_FIFO
4 = GC2S_SDRAM
6 = HD_AD


J
I
H
G
F
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D
C
B
A
1
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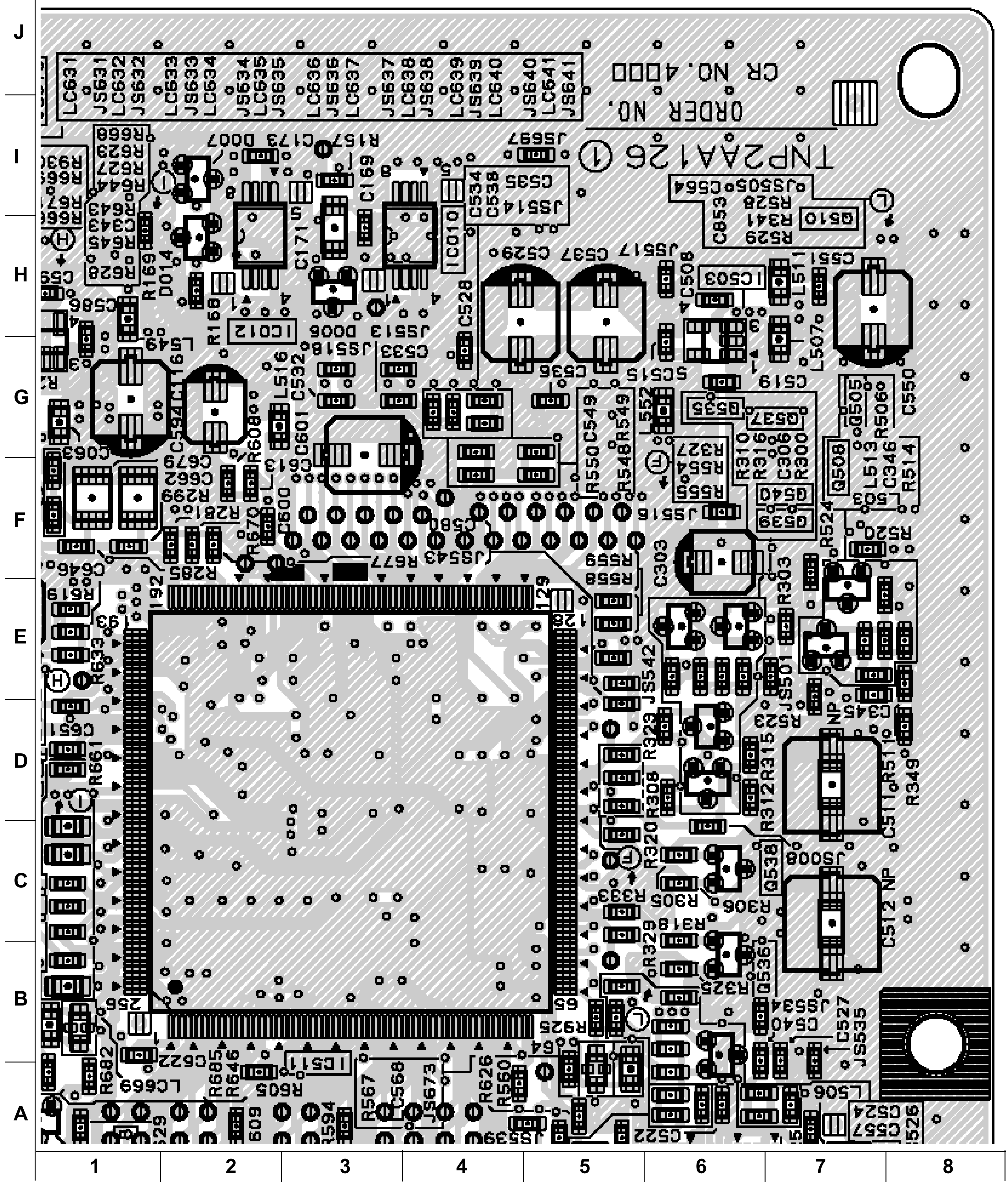
5
6
7
8
IC4540
IC4509
IC4508
IC4504
IC4505
IC4506
MAIN
Y
10bit
A/D
60MSPS
HD_Y
IC4503
IC4507
IC4511
IC4512
ver.2_for_Main_processor
Global_tvsiginal_processing_CoreLSI
GC2M
< SLAVE > 88 / 8A (TEST=0)
8C / 8E (TEST=1 & YSVM=0)
AD Macro
XTAL
Macro
For BurstLock
PLL
Macro
For Mid_CLK
PLL
Macro
V_SYNC
3.3V
2.5V
5V
256mA (NT)
Q4536
Q4538
Q4540
X4501
CLK
IIC
VP

| 1 | 2 |
|---|---|
| 3 | 4 |

**VIEW**



J
I
H
G
F
E
D
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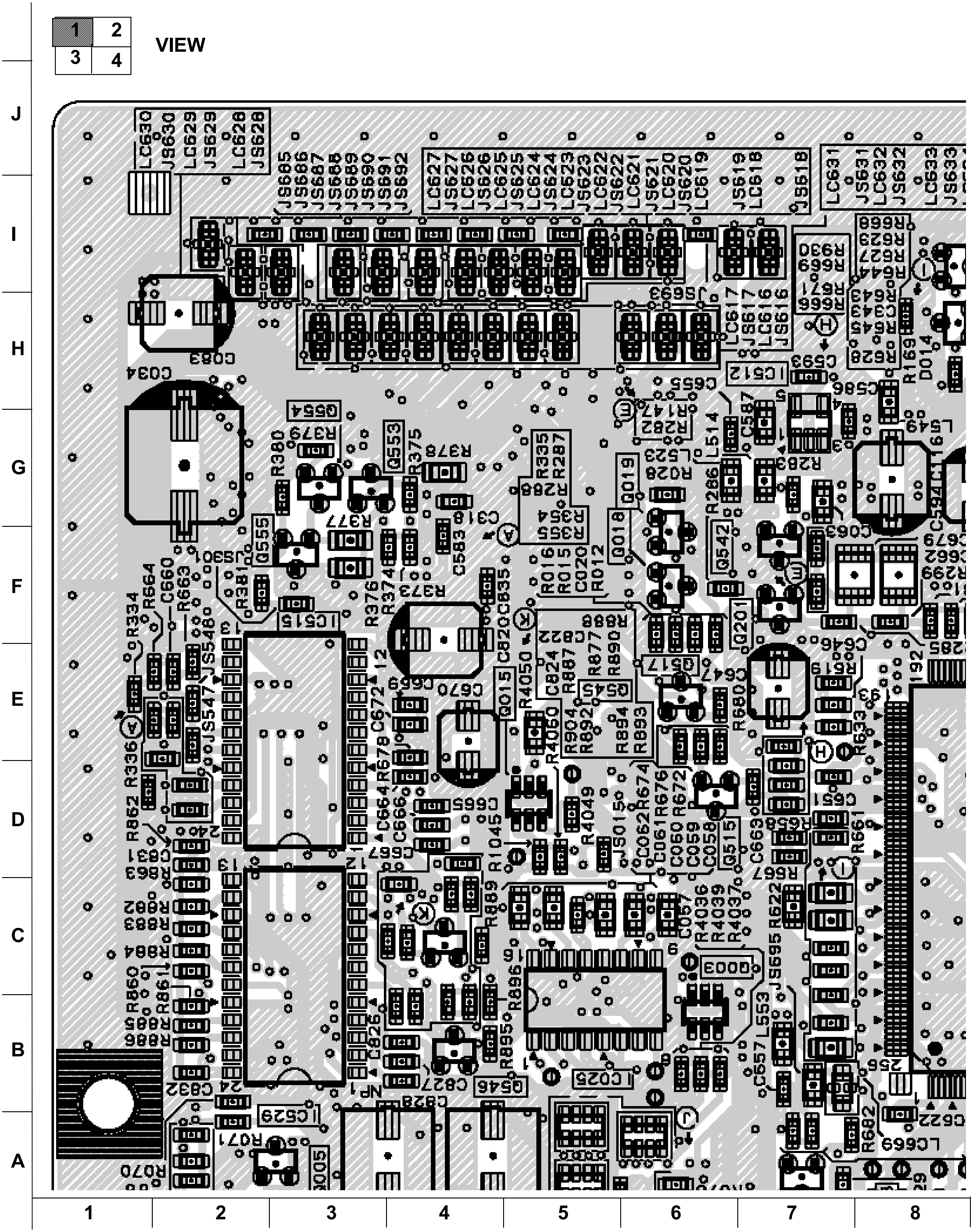
8
TNP2AA126
ORDER NO.
CR NO.4000
IC503
IC511
IC012
IC010

DG-BOARD BOTTOM-VIEW 2/4 TNP2AA126 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G



1
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3
4
VIEW
J
I
H
G
F
E
D
C
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A
1
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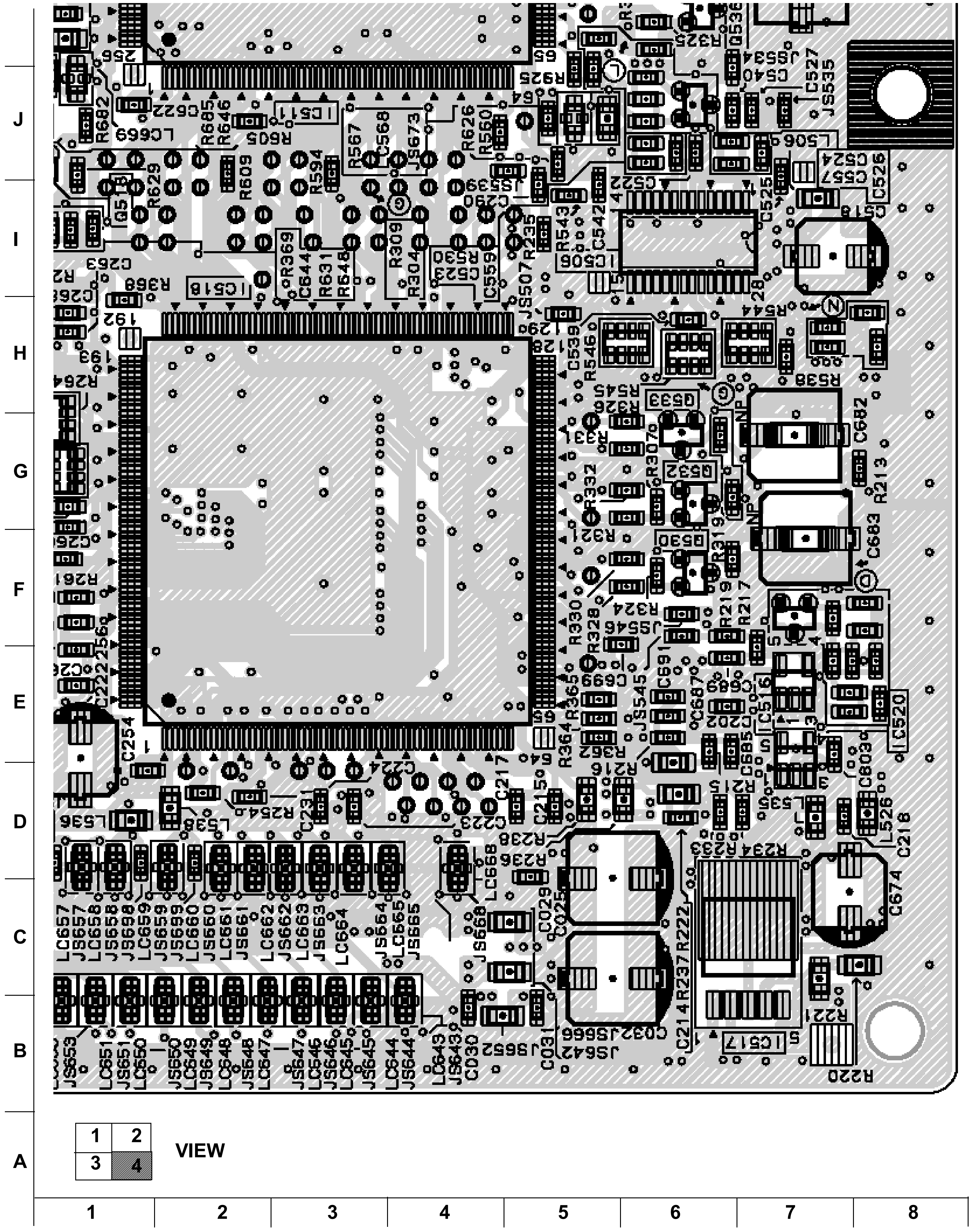
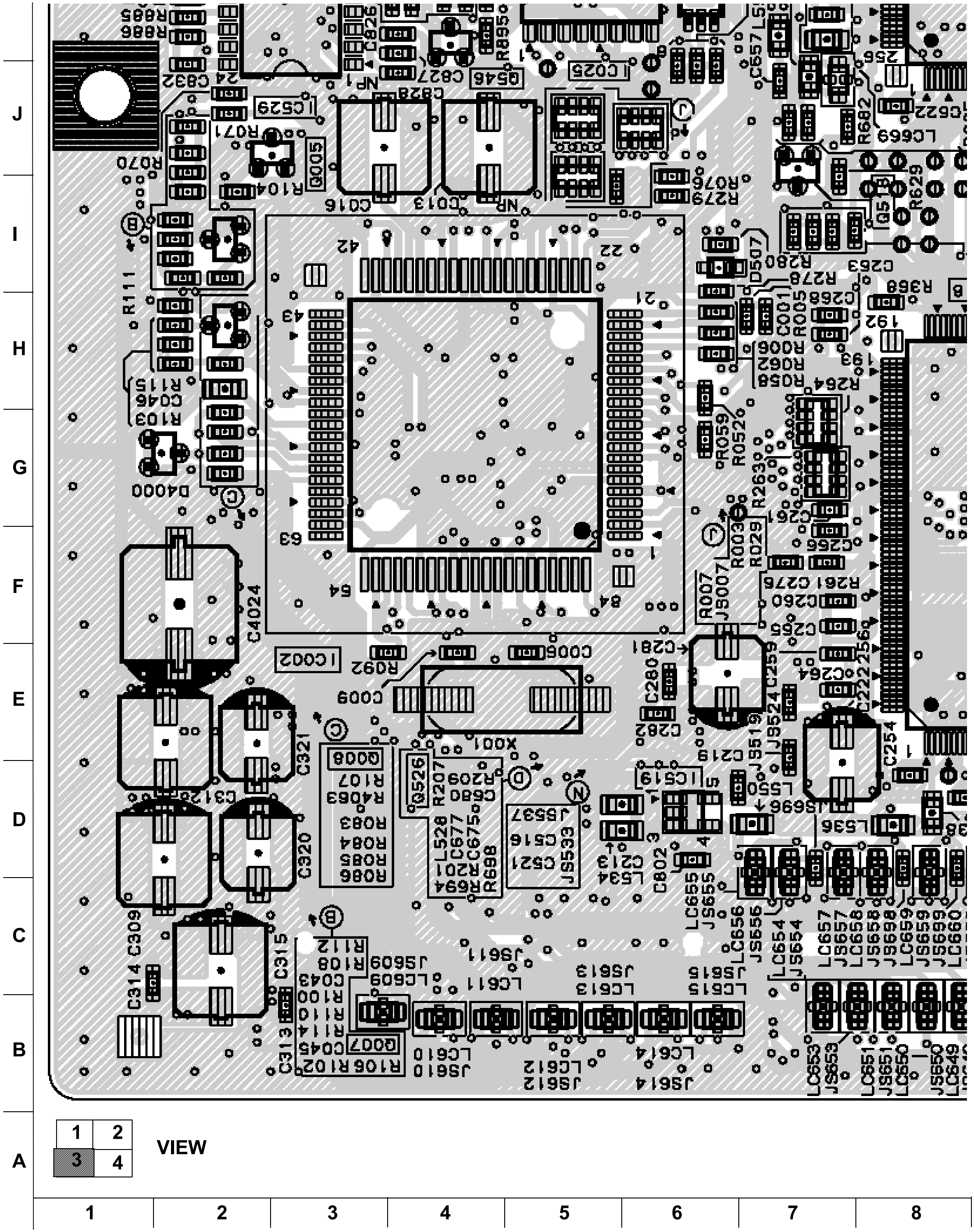
4
5
6
7
8
LC630
JS630
LC629
JS629
LC628
JS628
JS685
JS686
JS687
JS688
JS689
JS690
JS691
JS692
LC627
JS627
LC626
JS626
LC625
JS625
LC624
JS624
LC623
JS623
LC622
JS622
LC621
JS621
LC620
JS620
LC619
JS619
LC618
JS618
LC631
JS631
LC632
JS632
LC633
JS633
R930
R669
R671
R666
R660
R623
R627
R644
R643
C3443
R645
R628
R169
D014
JS693
LC617
JS617
LC616
JS616
C083
C034
IC512
C593
C655
R147
R282
L514
C587
C586
L549
Q554
R379
R380
Q553
R375
R378
R335
R287
R288
R354
R355
C318
C583
Q019
L523
R028
R286
R283
Q542
Q018
Q555
R377
JS301
R381
R376
R374
R373
C835
R016
R015
C020
R012
C063
C679
C662
R299
R664
C660
R663
R334
JS548
IC515
C820
C822
C824
R887
R877
R890
R888
Q201
Q517
C646
C647
R619
Q545
R285
C672
C669
C670
Q015
R4050
R4060
R904
R892
R894
R893
R680
R633
JS547
R336
R678
C664
C666
C665
R4049
JS015
C062
C061
C060
C059
C058
R676
R674
R672
Q515
C663
R658
C651
R661
R862
C831
R863
C667
R1045
R889
R667
R622
R882
R883
R884
R4036
R4039
R4037
C057
JS695
Q003
R896
R860
R861
R885
R886
R895
C826
L553
C657
IC025
Q546
C827
NP1
C828
C832
IC529
R071
R070
Q005
R682
LC669
C622
256
192
193
A
E
H
I
J
K
24
13
12
1
9
16
8

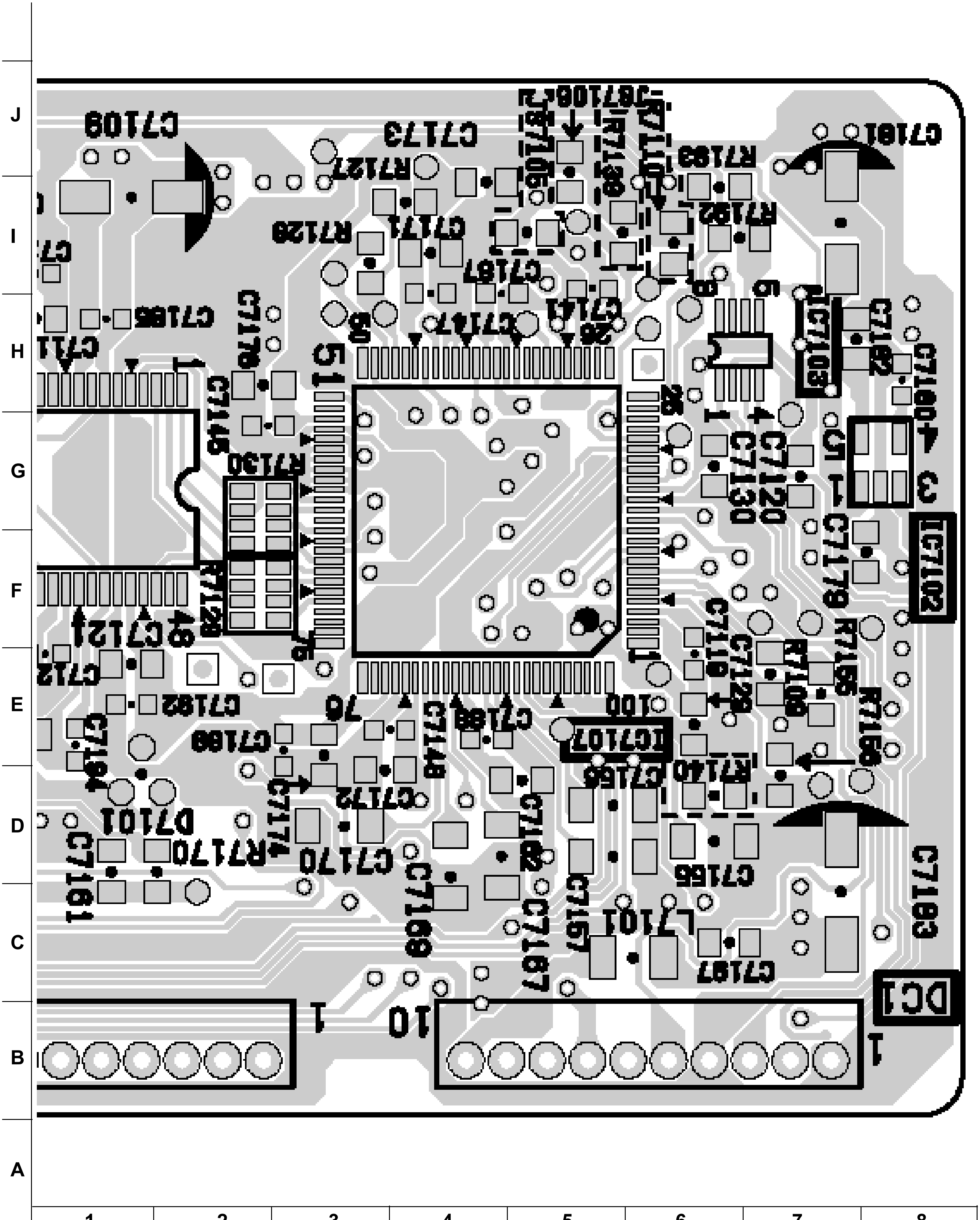
DG-BOARD BOTTOM-VIEW 1/4 TNP2AA126 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
VIEW
IC511
IC518
IC506
IC517
IC516
IC520
Q533
Q532
Q530
Q536
C622
R685
R646
R605
R609
R594
R567
C568
JS673
R626
R560
R682
LC669
R629
R925
C540
C527
JS535
JS534
R325
L506
C524
C526
C557
C518
C522
C525
JS539
C290
R543
C542
R369
C644
R631
R648
R309
R304
R530
C523
C559
R235
JS507
R368
C263
R544
R538
C539
R546
R545
R326
R331
R307
C682
R332
R321
R319
R213
C683
R324
R330
R328
JS546
R219
R217
C699
JS545
C691
C687
C689
C202
C203
R365
R364
R362
R216
R215
C685
C803
L535
L526
C218
C254
R254
C231
C224
C217
C215
C223
R238
R236
R233
R234
C674
LS36
LS38
LC668
JS668
C029
C025
R222
R237
C214
C032
JS666
C031
JS642
JS652
C030
JS643
LC649
R221
R220
LC657
JS657
LC658
JS658
JS698
LC659
JS659
JS699
LC660
JS660
LC661
JS661
LC662
JS662
LC663
JS663
LC664
JS664
LC565
JS665
JS653
LC651
JS651
LC650
JS650
LC649
JS649
LC648
JS648
LC647
JS647
LC646
JS646
LC645
JS645
LC644
JS644
192
193
128
129
64
65
256
1

DG-BOARD BOTTOM-VIEW 4/4 TNP2AA126 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G

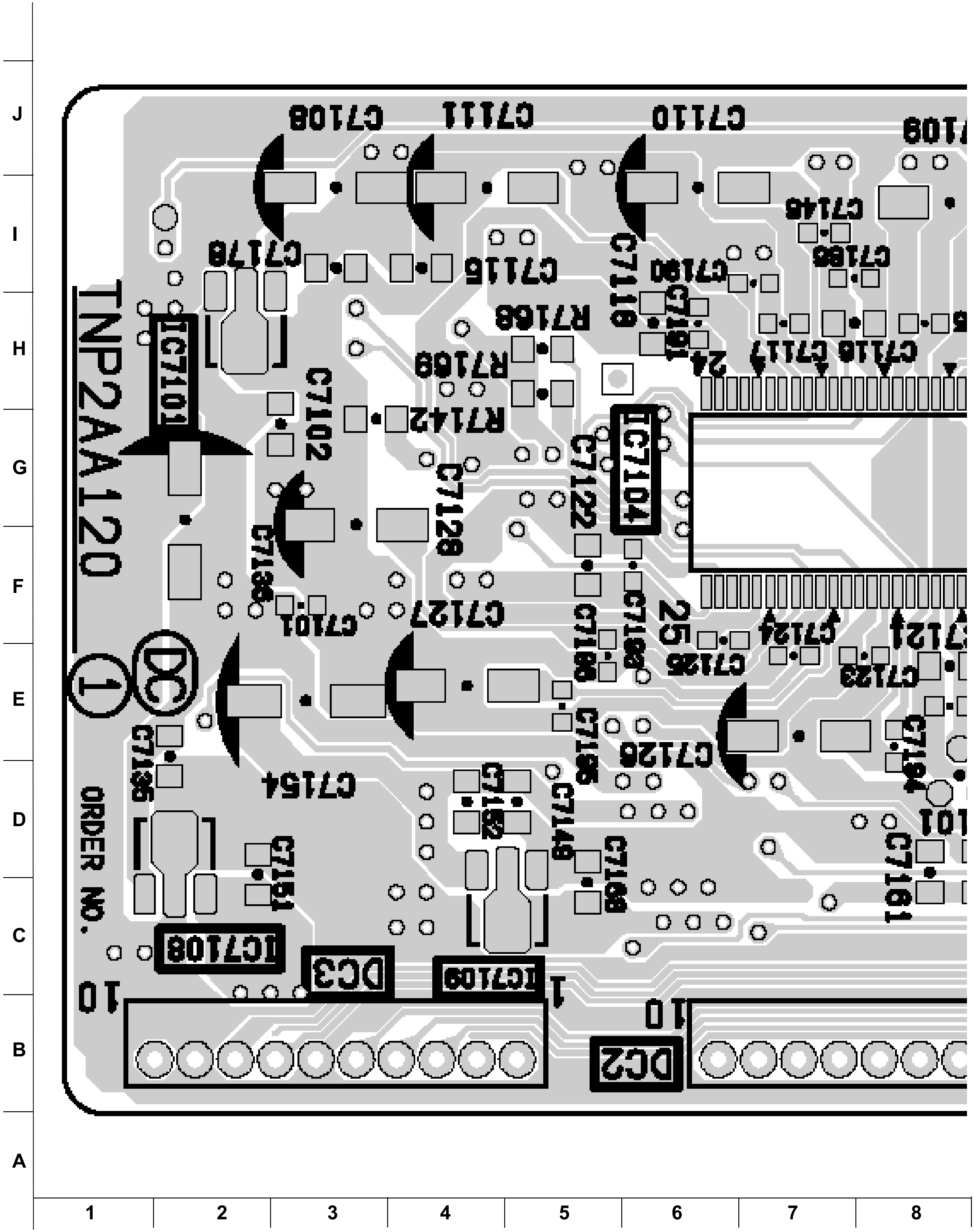

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
VIEW
1
2
3
4
R885
R886
C832
R070
R071
IC529
Q005
R104
IC016
IC013
NR
C828
C827
NP1
Q546
IC025
R076
R279
C657
LC669
R682
C622
R629
Q511
C263
R368
R280
R278
D507
C268
C001
R005
R006
R062
R058
R264
R059
R052
R263
R003
R029
R007
JS007
C261
C266
C276
R261
C260
C265
C256
C264
C222
C281
C280
C282
C259
JS524
JS519
C219
IC519
L550
JS696
L536
C254
R111
R115
C046
R103
D4000
C4024
IC002
R092
C009
X001
C006
Q008
R107
R4063
R083
R084
R085
R086
Q526
R207
R209
C680
L528
C677
C675
R201
R698
R694
JS537
C516
C521
JS533
L534
C213
C802
LC655
JS655
LC656
JS656
LC654
JS654
LC657
JS657
LC658
JS658
JS698
LC659
JS659
JS699
LC660
C321
C312
C320
C309
C314
C315
C313
R112
R108
C043
R100
R110
R114
C045
R102
R106
Q007
LC609
JS609
LC610
JS610
LC611
JS611
LC612
JS612
LC613
JS613
LC614
JS614
LC615
JS615
LC653
JS653
LC651
JS651
LC650
JS650
LC649
42
43
63
64
84
1
21
22
192
193

DG-BOARD BOTTOM-VIEW 3/4 TNP2AA126 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G



J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
C7109
C7173
R7127
R7129
C7171
C7187
C7141
C7147
C7185
C7176
C7145
R7130
R7128
C7121
C7182
C7184
C7189
C7174
C7172
C7170
C7148
C7188
C7169
C7162
C7167
C7157
C7156
R7140
C7155
L7101
C7197
C7193
IC7107
IC7102
IC7103
C7181
R7183
R7192
C7192
C7160
C7120
C7130
C7179
C7119
C7129
R7109
R7165
R7166
D7101
R7170
C7161
DC1
51
50
26
25
1
76
100
48
5
8
4
3
10

DC-BOARD TOP-VIEW 2/2 TNP2AA120 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


J
I
H
G
F
E
D
C
B
A
1
2
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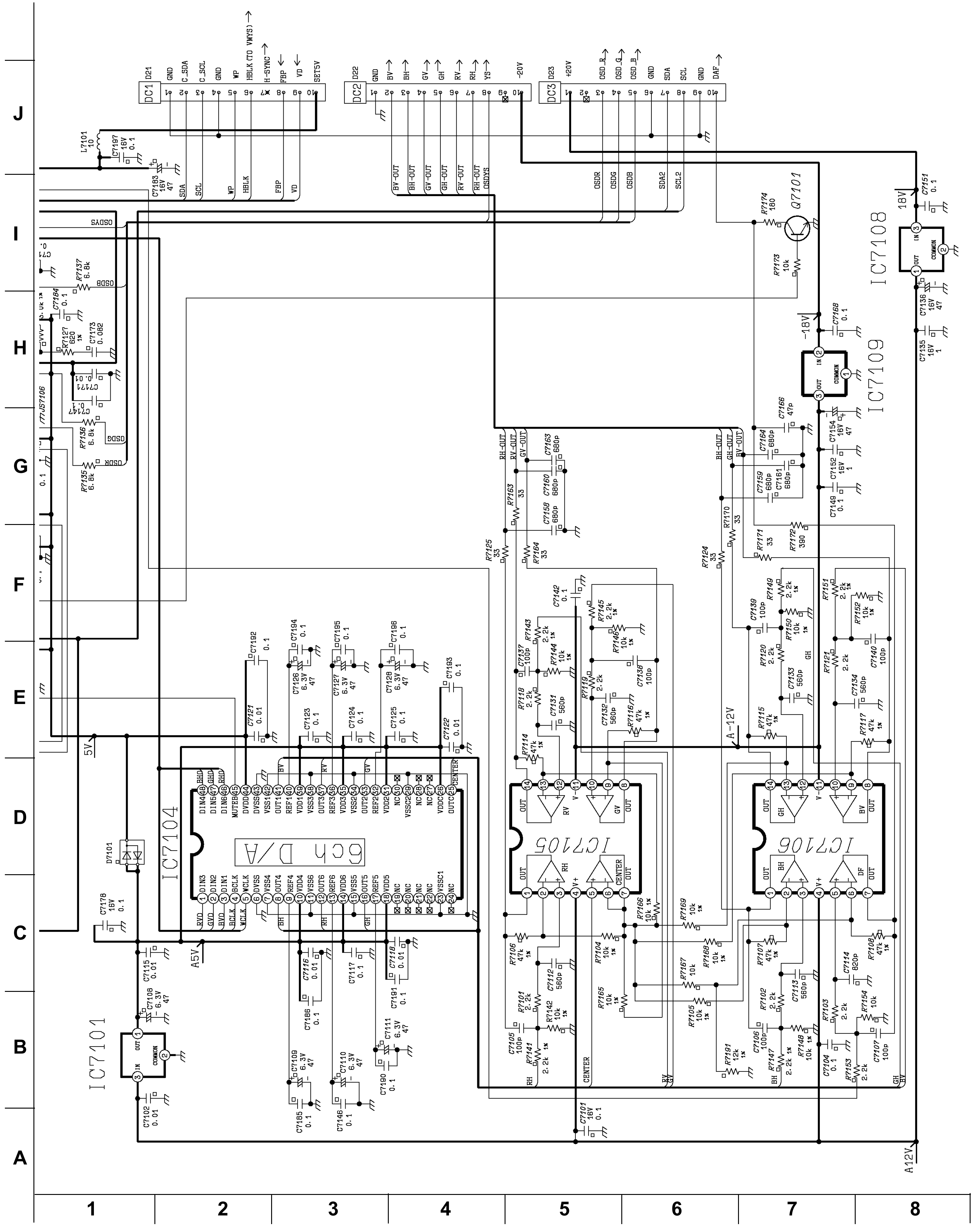
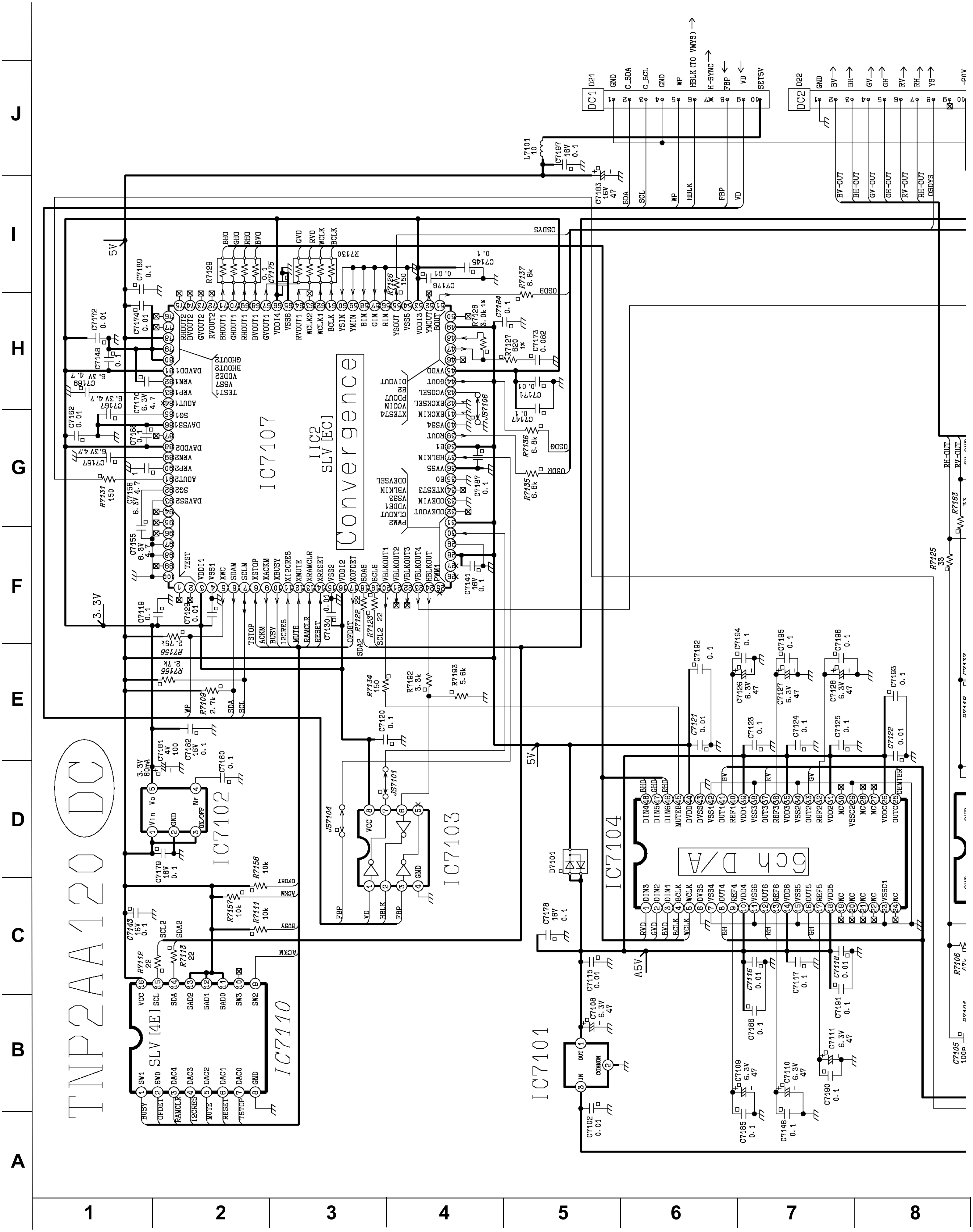
5
6
7
8
TNP2AA120
DC
①
ORDER NO.
IC7101
IC7104
IC7108
IC7109
DC3
DC2
C7108
C7111
C7110
C7178
C7115
C7145
C7186
C7180
C7191
C7102
C7128
C7122
C7136
C7101
C7127
C7117
C7125
C7124
C7121
C7123
C7126
C7185
C7154
C7151
C7152
C7149
C7189
C7184
C7161
R7168
R7169
R7142
24
25
1
10
10

DC-BOARD TOP-VIEW 1/2 TNP2AA120 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G

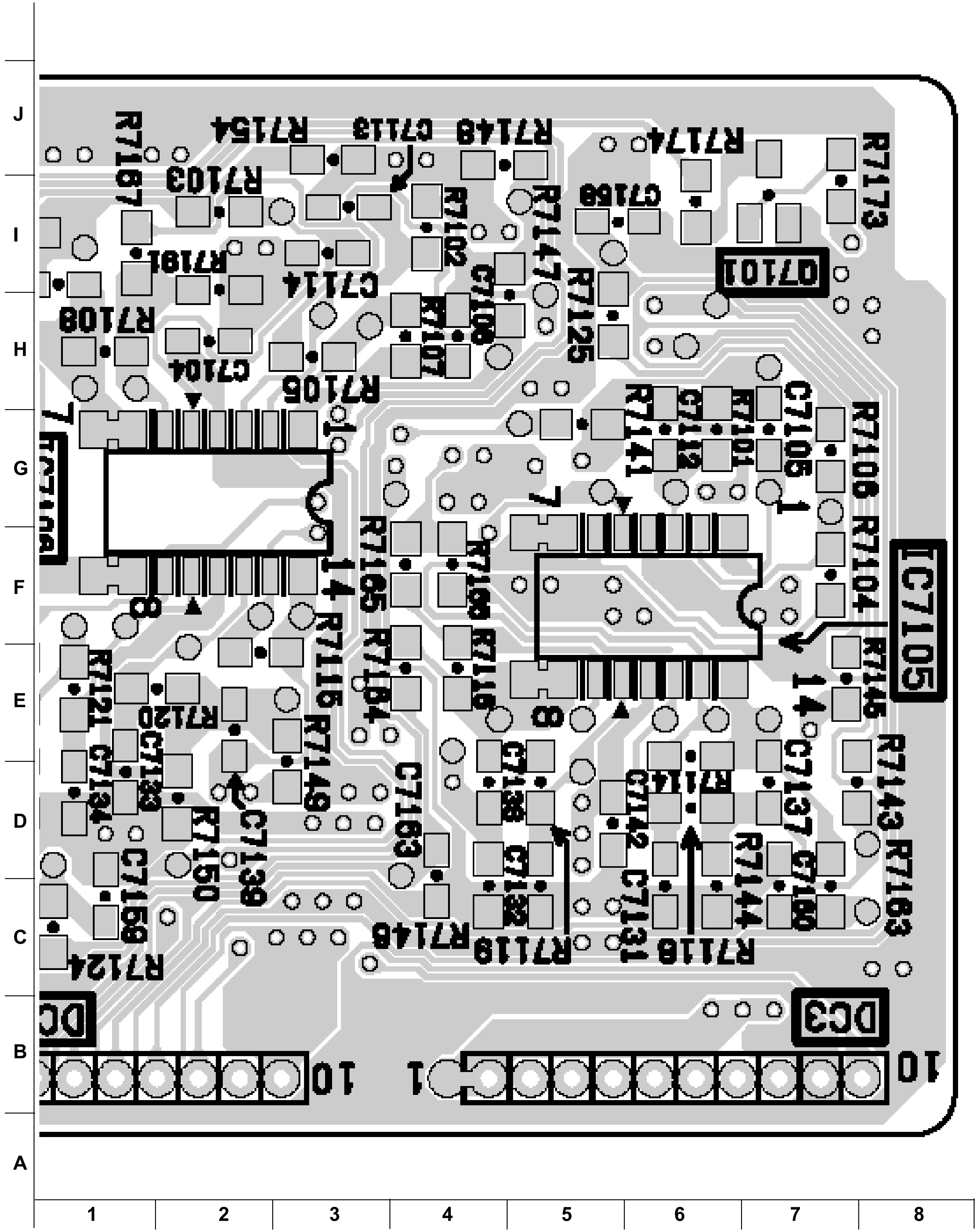

DC1
D21
GND
C_SDA
C_SCL
GND
WP
HBLK (TO VMYS)
H-SYNC
FBP
VD
SET5V
DC2
D22
GND
BV
BH
GV
GH
RV
RH
YS
-20V
DC3
D23
+20V
OSD_R
OSD_G
OSD_B
GND
SDA
SCL
GND
DAF
L7101
10
C7197
16V
0.1
C7183
16V
47
SDA
SCL
WP
HBLK
FBP
VD
BV-OUT
BH-OUT
GV-OUT
GH-OUT
RV-OUT
RH-OUT
OSDYS
OSDR
OSDG
OSDB
SDA2
SCL2
R7174
180
Q7101
R7173
10k
18V
C7151
0.1
IC7108
IN
OUT
COMMON
C7136
16V
47
C7135
16V
1
-18V
C7168
0.1
IC7109
C7154
16V
47
C7152
16V
1
C7149
0.1
R7137
6.8k
C7184
0.1
R7127
620
C7173
0.082
C7171
0.01
C7147
0.1
JS7106
R7136
6.8k
R7135
6.8k
RH-OUT
RV-OUT
GV-OUT
C7163
680p
C7160
680p
R7163
33
C7158
680p
R7125
33
R7164
33
BH-OUT
GH-OUT
BV-OUT
C7164
680p
C7166
47p
C7159
680p
C7161
680p
R7170
33
R7124
33
R7171
33
R7172
390
C7142
0.1
R7145
2.2k
R7143
2.2k
R7144
10k
R7146
10k
C7137
100p
C7138
100p
R7118
2.2k
C7131
560p
R7119
2.2k
C7132
560p
R7116
47k
R7114
47k
A-12V
C7139
100p
R7149
2.2k
R7151
2.2k
R7150
10k
R7152
10k
R7120
2.2k
R7121
2.2k
C7140
100p
C7133
560p
C7134
560p
R7115
47k
R7117
47k
C7192
0.1
C7194
0.1
C7195
0.1
C7196
0.1
C7126
6.3V
47
C7127
6.3V
47
C7128
6.3V
47
C7193
0.1
C7121
0.01
C7123
0.1
C7124
0.1
C7125
0.1
C7122
0.01
5V
IC7104
6ch D/A
DIN4 DIN5 DIN6 MUTEB DVDD DVSS VSS1 OUT1 REF1 VDD1 VSS3 OUT3 REF3 VDD3 VSS2 OUT2 REF2 VDD2 NC VSSC2 NC NC VDDC OUTC
BHO GHO RHO BV RV GV CENTER
DIN3 DIN2 DIN1 BCLK WCLK DVSS VSS4 OUT4 REF4 VDD4 VSS6 OUT6 REF6 VDD6 VSS5 OUT5 REF5 VDD5 NC NC NC VSSC1 NC
RVO GVO BVO BCLK WCLK BH RH GH
D7101
C7178
16V
0.1
A5V
C7115
0.01
C7108
6.3V
47
IC7101
OUT
IN
COMMON
C7102
0.01
C7116
0.01
C7117
0.1
C7118
0.01
C7186
0.1
C7191
0.1
C7109
6.3V
47
C7110
6.3V
47
C7111
6.3V
47
C7185
0.1
C7146
0.1
C7190
0.1
IC7105
OUT RV GV OUT V- V+ RH CENTER
IC7106
OUT GH BV OUT V- V+ BH DF
R7166
10k
R7169
10k
R7106
47k
R7104
10k
R7168
10k
R7167
10k
C7112
560p
R7101
2.2k
R7142
10k
R7165
10k
R7105
10k
C7105
100p
R7141
2.2k
RH
CENTER
RV
GV
R7191
12k
R7107
47k
R7108
47k
C7114
820p
R7102
2.2k
C7113
560p
R7103
2.2k
R7154
10k
C7106
100p
R7147
2.2k
R7148
10k
C7104
0.1
R7153
2.2k
C7107
100p
BH
GH
BV
C7101
16V
0.1
A12V
A B C D E F G H I J
1 2 3 4 5 6 7 8

**DC-BOARD 2/2 TNP2AA120 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**

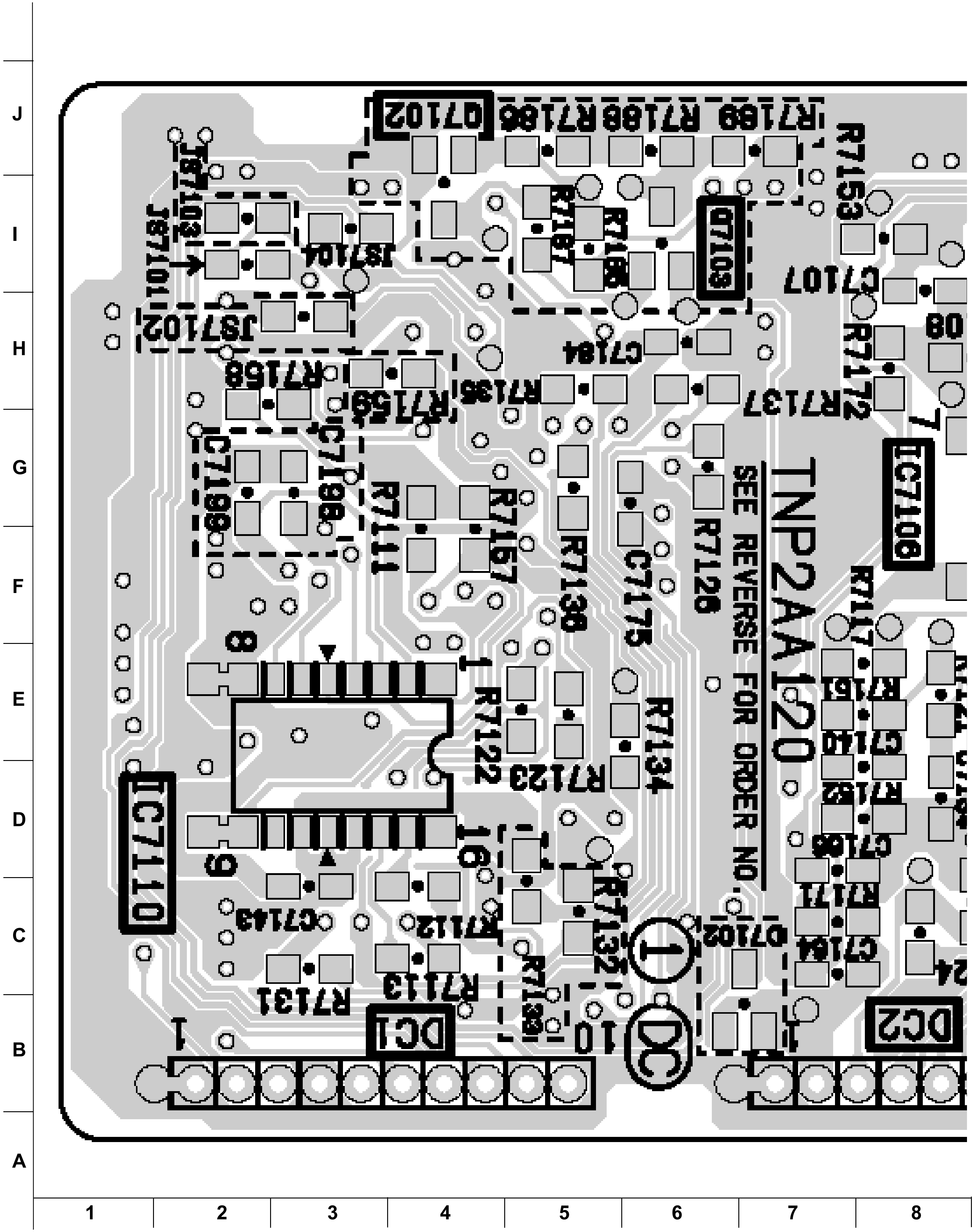


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
TNP2AA120 (DC)
IC7107
IIC2
SLV [EC]
Convergence
IC7104
6ch D/A
IC7102
IC7103
IC7110
SLV [4E]
IC7101
D7101
DC1
D21
DC2
D22
GND
C_SDA
C_SCL
WP
HBLK (TO VMYS)
H-SYNC
FBP
VD
SET5V
BV
BH
GV
GH
RV
RH
YS
BV-OUT
BH-OUT
GV-OUT
GH-OUT
RV-OUT
RH-OUT
OSDYS
L7101
10
C7197
16V
0.1
C7183
16V
47
5V
3.3V
A5V
SDA
SCL
OSDB
OSDG
OSDR
R7129
R7130
R7126
150
R7137
6.8k
R7128
3.0k 1%
R7127
620
1%
R7136
6.8k
R7135
6.8k
R7131
150
R7156
2.75k
R7155
2.7k
R7109
2.7k
R7134
150
R7192
3.3k
R7193
5.6k
R7158
10k
R7157
10k
R7111
10k
R7112
22
R7113
22
R7122
22
R7123
22
R7125
33
R7163
R7106
JS7101
JS7104
JS7106
BUSY
OFDET
RAMCLR
12CRES
MUTE
RESET
TSTOP
ACKM
SCL2
SDA2
VCC
GND
Vin
Vo
Nr
ON/OFF
OUT
IN
COMMON
3.3V
80mA

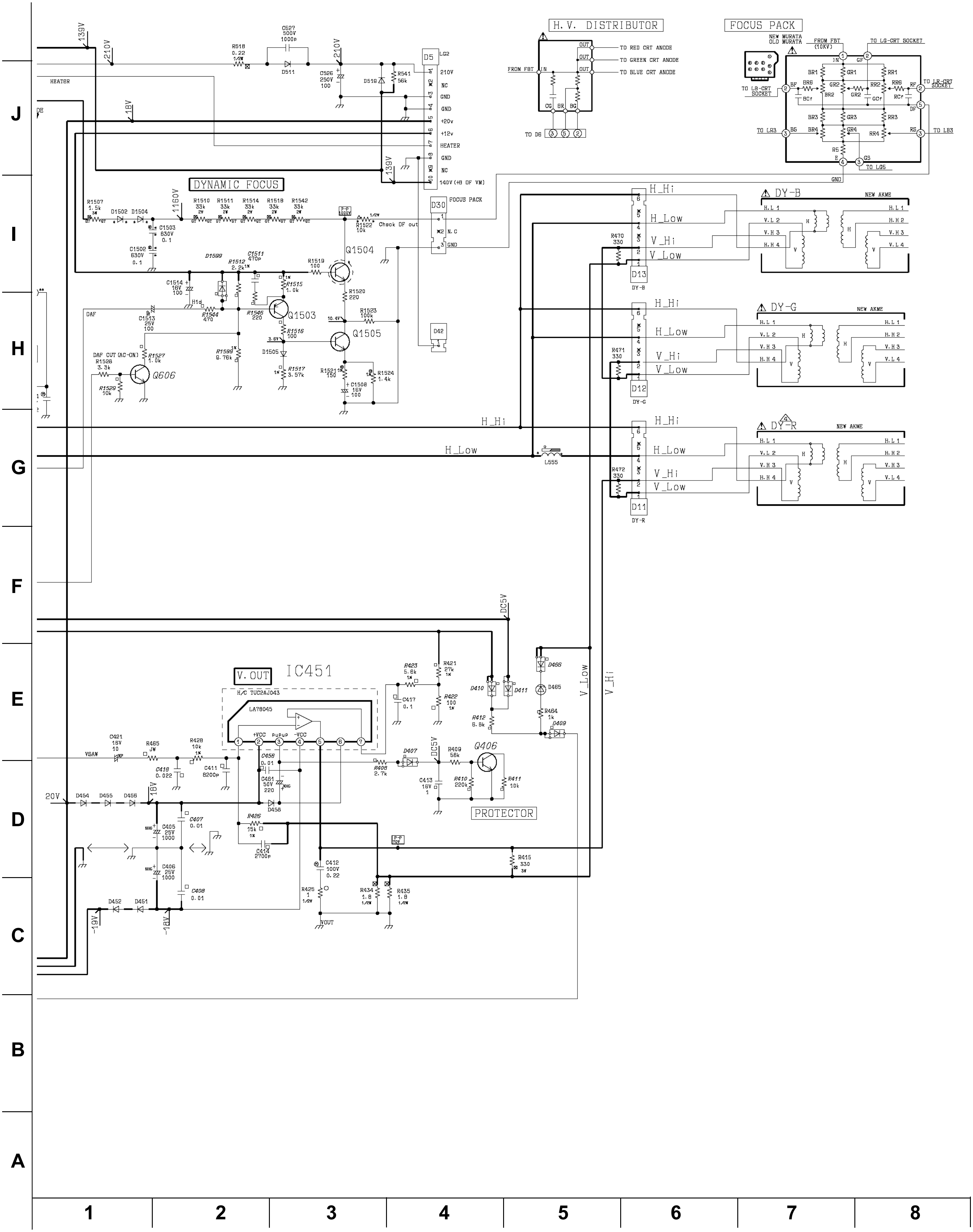
DC-BOARD 1/2 TNP2AA120 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
IC7105
IC7104
Q7101
DC3
R7173
R7174
R7148
C7113
R7154
R7167
R7103
R7102
R7147
C7158
R7191
C7114
R7125
R7108
C7104
R7107
C7108
R7105
R7141
C7112
R7101
C7105
R7106
R7104
R7165
R7160
R7145
R7115
R7164
R7116
R7121
R7120
R7149
C7163
C7138
C7142
R7114
C7137
R7143
C7134
C7133
R7150
C7139
C7132
C7131
R7144
C7160
R7163
C7159
R7146
R7119
R7118
R7124
1
7
8
14
10

DC-BOARD BOTTOM-VIEW 2/2 TNP2AA120 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G

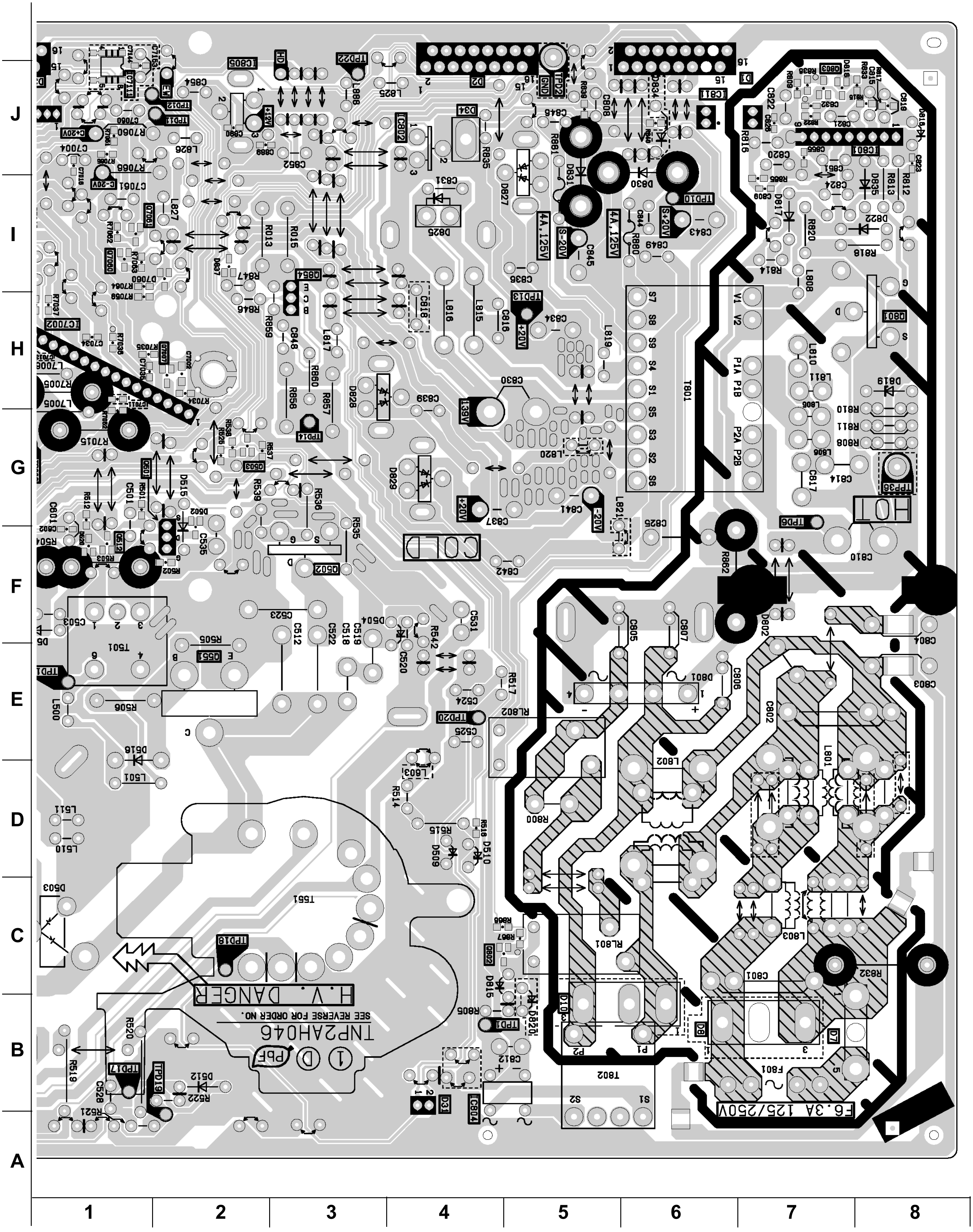

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
Q7102
R7186
R7188
R7189
R7153
JS7103
JS7101
JS7104
R7187
R7185
Q7103
C7107
JS7102
C7184
R7172
R7158
R7135
R7159
R7137
IC7199
C7198
R7111
R7157
R7130
C7175
R7126
SEE REVERSE FOR ORDER NO.
TNP2AA120
IC7106
R7117
R7151
C7140
R7152
C7108
R7171
C7104
R7122
R7123
R7134
IC7110
C7143
R7112
R7132
D7102
R7113
R7131
R7133
DC1
DC2
DC
1
8
9
16
10
7

DC-BOARD BOTTOM-VIEW 1/2 TNP2AA120 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G

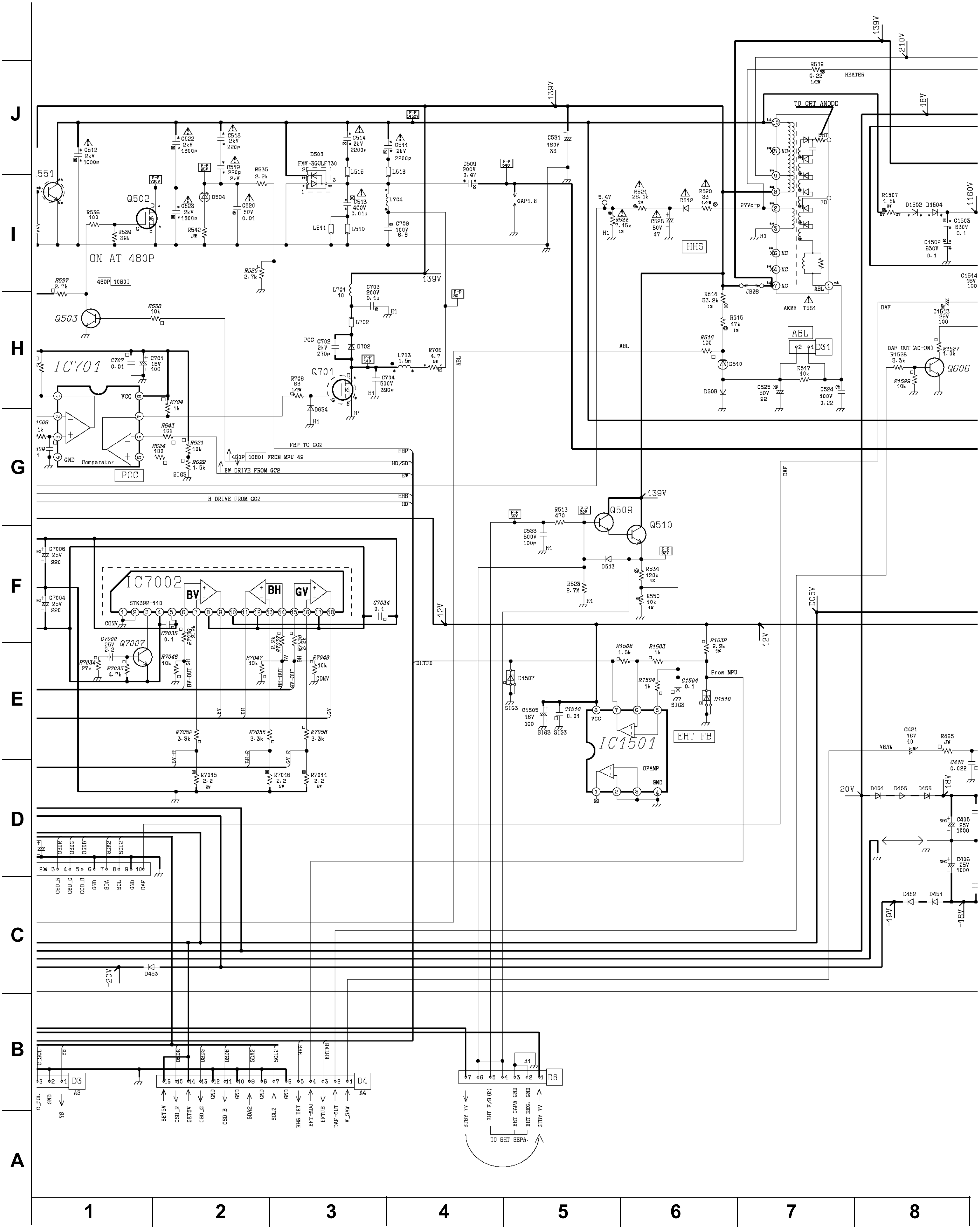


139V
210V
HEATER
18V
R518
0.22
1/2W
C527
500V
1000p
D511
C526
250V
100
D519
R541
56k
D5
LG2
210V
NC
GND
GND
+20v
+12v
HEATER
GND
NC
140V (+B OF VM)
139V
H.V. DISTRIBUTOR
FROM FBT
IN
OUT
OUT
OUT
TO RED CRT ANODE
TO GREEN CRT ANODE
TO BLUE CRT ANODE
CG
BR
BG
TO D6
FOCUS PACK
NEW MURATA
OLD MURATA
FROM FBT
(10KV)
TO LG-CRT SOCKET
IN
GF
BR1
GR1
RR1
BF
BR6
GR2
RR2
RR6
RF
TO LR-CRT SOCKET
TO LB-CRT SOCKET
BR2
GR2
BCf
GCf
RCf
DF
BR3
GR3
RR3
TO LR3
BS
BR4
GR4
RR4
RS
TO LB3
R5
E
GS
TO LG5
GND
DYNAMIC FOCUS
R1507
1.5k
3W
D1502
D1504
1160V
R1510
33k
2W
R1511
33k
2W
R1514
33k
2W
R1518
33k
2W
R1542
33k
2W
P-P
1000V
R1522
10k
1/2W
Check DF out
D30
FOCUS PACK
N.C
GND
C1503
630V
0.1
C1502
630V
0.1
D1599
R1512
2.2k
C1511
470p
R1519
100
Q1504
C1514
16V
100
R1515
1.0k
R1520
220
H1d
DAF
C1513
25V
100
R1544
470
R1546
220
Q1503
R1523
100k
10.4V
R1516
100
3.6V
Q1505
D42
D1505
DAF CUT (AC-ON)
R1528
3.3k
R1527
1.0k
Q606
R1529
10k
R1599
9.76k
R1517
3.57k
R1521
150
R1524
1.4k
C1508
16V
100
H_Hi
H_Low
V_Hi
V_Low
R470
330
D13
DY-B
DY-B
NEW AKME
H.L 1
V.L 2
V.H 3
H.H 4
H.L 1
H.H 2
V.H 3
V.L 4
H
V
H_Hi
H_Low
V_Hi
V_Low
R471
330
D12
DY-G
DY-G
NEW AKME
H.L 1
V.L 2
V.H 3
H.H 4
H.L 1
H.H 2
V.H 3
V.L 4
H_Hi
H_Low
L555
H_Hi
H_Low
V_Hi
V_Low
R472
330
D11
DY-R
DY-R
NEW AKME
H.L 1
V.L 2
V.H 3
H.H 4
H.L 1
H.H 2
V.H 3
V.L 4
DC5V
V.OUT
IC451
H/C TUC2AJ043
LA78045
+VCC
pupup
-VCC
R423
5.6k
R421
27k
C417
0.1
R422
100
D410
D411
D466
D465
R412
6.8k
R464
1k
D409
V_Low
V_Hi
C421
16V
10
VSAW
R465
JW
R428
10k
C418
0.022
C411
8200p
C458
0.01
C461
50V
220
R408
2.7k
D407
DC5V
R409
56k
Q406
C413
16V
1
R410
220k
R411
10k
PROTECTOR
20V
D454
D455
D456
18V
D458
C405
25V
1000
C407
0.01
R426
15k
C414
2700p
P-P
70V
R415
330
3W
C406
25V
1000
C408
0.01
C412
100V
0.22
R425
1
1/2W
R434
1.8
1/2W
R435
1.8
1/2W
VOUT
D452
D451
-19V
-18V
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8

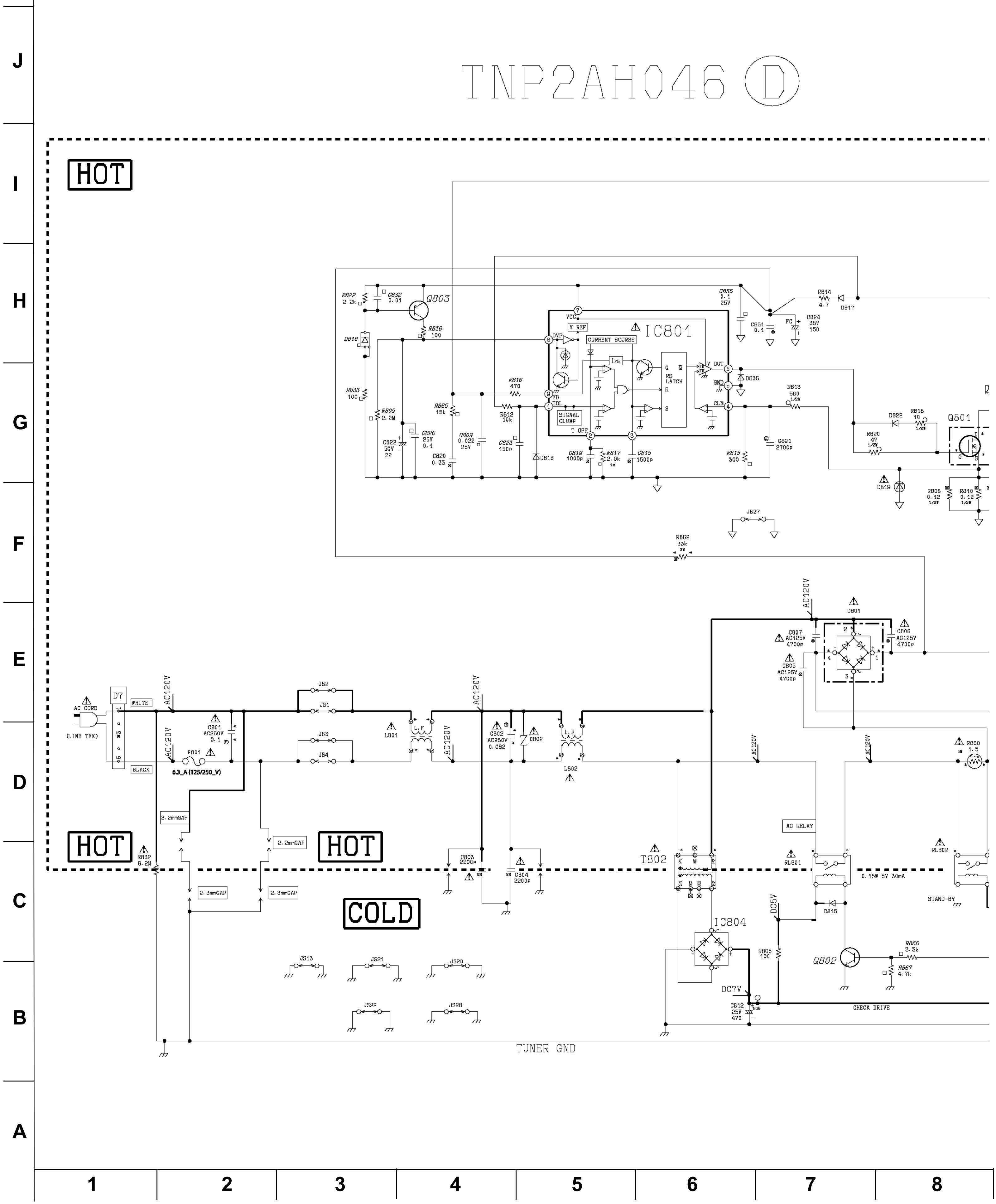
D-BOARD 5/5 TNP2AH046 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
T801
T802
T551
T501
RL801
RL802
D801
L801
L802
L803
F801
COLD
HOT
H.V. DANGER
SEE REVERSE FOR ORDER NO.
TNP2AH046
PbF
F6.3A 125/250V
4A 125V
4A 125V
+12V
+20V
+20V
-20V
S+20V
S-20V
139V
GND

D-BOARD 2/2 TNP2AH046 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G

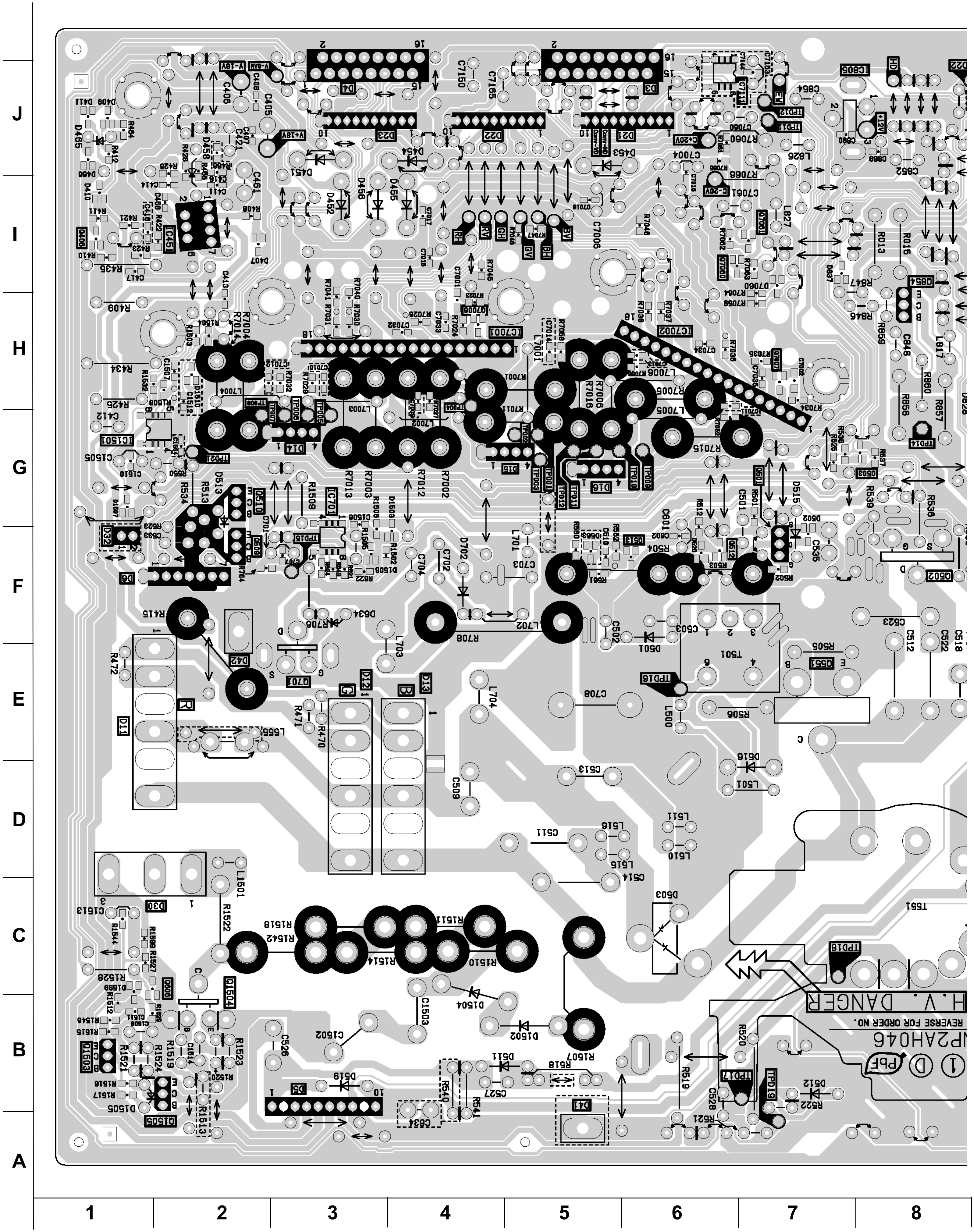

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
139V
210V
18V
160V
R519 0.22 1/2W HEATER
TO CRT ANODE
EHT
FO
ABL
AKME T551
J526
HHS
ABL
D31
C512 2kV 1000p
C522 2kV 1800p
C523 2kV 1800p
C518 2kV 220p
C519 220p 2kV
C514 2kV 2200p
C511 2kV 2200p
C513 400V 0.01u
C708 100V 6.8
C509 200V 0.47
C531 160V 33
D503 FMV-3GULF730
L515
L516
L704
L511
L510
GAP1.6
Q502
Q503
R535 2.2k
R536 100
R539 39k
R542 JW
D504
C520 50V 0.01
ON AT 480P
480P 1080I
R537 2.7k
R538 10k
R525 2.7k
5.4V
R522 7.15k 1%
R521 26.1k 1%
D512
R520 33 1/2W
27Vo-p
C526 50V 47
R514 33.2k 1%
R515 47k 1%
R516 100
D510
D509
R517 10k
C525 NP 50V 22
C524 100V 0.22
R1507 1.5k 3W
D1502
D1504
C1503 630V 0.1
C1502 630V 0.1
C1514 16V 100
C1513 25V 100
DAF
DAF CUT (AC-ON)
R1526 3.3k
R1527 1.0k
R1529 10k
Q606
L701 10
C703 200V 0.1u
L702
PCC
C702 2kV 270p
D702
L703 1.5m
R708 4.7 5W
C704 500V 390p
R706 56 1/2W
Q701
D634
H1
IC701
C707 0.01
C701 16V 100
VCC
R704 1k
R643 100
R624 100
R621 10k
R622 1.5k
SIG3
GND
Comparator
PCC
R1509 1k
FBP TO GC2
FBP
HD/SD
EW
480P 1080I FROM MPU 42
EW DRIVE FROM GC2
H DRIVE FROM GC2
HHS
HD
Q509
Q510
R513 470
C533 500V 100p
D513
R534 120k 1%
R550 10k 1%
R523 2.7M
12V
DC5V
C7006 25V 220
C7004 25V 220
IC7002
STK392-110
BV
BH
GV
CONV
C7034 0.1
C7002 25V 2.2
Q7007
R7034 27k
R7035 4.7k
C7035 0.1
R7046 10k
R7047 10k
R7048 10k
BV-OUT
BH-OUT
GV-OUT
CONV
R7052 3.3k
R7055 3.3k
R7058 3.3k
R7015 2.2 2W
R7016 2.2 2W
R7011 2.2 2W
EHTFB
D1507
R1508 1.5k
R1503 1k
R1504 1k
C1504 0.1
R1532 2.2k 1%
From MPU
D1510
C1505 16V 100
C1510 0.01
IC1501
OPAMP
EHT FB
C421 16V 10 NP
R465 JW
VSAW
C418 0.022
20V
D454
D455
D456
C405 25V 1000
C406 25V 1000
D452
D451
-19V
-18V
-20V
D453
OSD_R
OSD_G
OSD_B
GND
SDA
SCL
DAF
D3
A3
YS
D4
A4
SET5V
OSD_R
OSD_G
OSD_B
SDA2
SCL2
HHS DET
EFT-ADJ
EFTFB
DAF-CUT
V_SAW
D6
STBY 7V
EHT F/B(R)
EHT CAPA GND
EHT REG.
GND
TO EHT SEPA.

**D-BOARD 4/5 TNP2AH046 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**

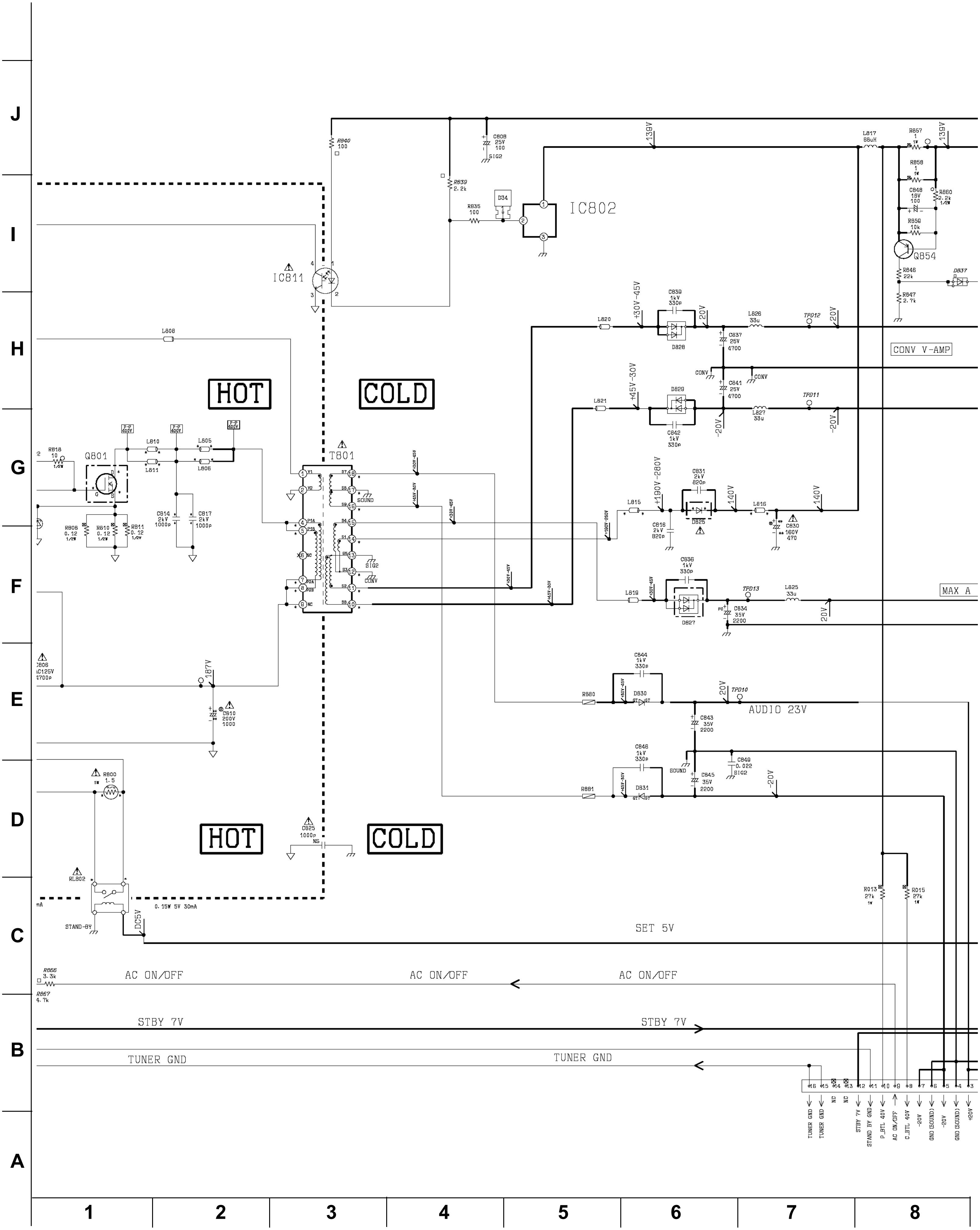


TNP2AH046 D
HOT
HOT
HOT
COLD
IC801
V REF
CURRENT SOURSE
OVP
VCC
IFB
RS LATCH
V OUT
GND
CLM
FB TDL
SIGNAL CLUMP
T OFF
Q803
Q801
Q802
R822 2.2k
C832 0.01
R836 100
D818
R833 100
R809 2.2M
C822 50V 22
C826 25V 0.1
R865 15k
C820 0.33
C809 0.022 25V
R816 470
R812 10k
C823 150p
D816
C819 1000p
R817 2.0k 1%
C815 1500p
C855 0.1 25V
C851 0.1
FC
C824 35V 150
R814 4.7
D817
D835
R813 560 1/2W
R815 300
C821 2700p
D822
R818 10 1/2W
R820 47 1/2W
D819
R808 0.12 1/2W
R810 0.12 1/2W
J527
R862 33k 3W
AC120V
D801
C807 AC125V 4700p
C806 AC125V 4700p
C805 AC125V 4700p
AC CORD
(LINE TEK)
D7
WHITE
BLACK
C801 AC250V 0.1
F801
6.3_A (125/250_V)
JS2
JS1
JS3
JS4
L801
L.F
C802 AC250V 0.082
D802
L802
R800 5W 1.5
2.2mmGAP
2.2mmGAP
2.3mmGAP
2.3mmGAP
R832 8.2M
C803 2200p
C804 2200p
NS
T802
AC RELAY
RL801
RL802
0.15W 5V 30mA
STAND-BY
D815
DC5V
IC804
R805 100
R866 3.3k
R867 4.7k
DC7V
C812 25V 470
CHECK DRIVE
JS13
JS21
JS20
JS22
JS28
TUNER GND
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8

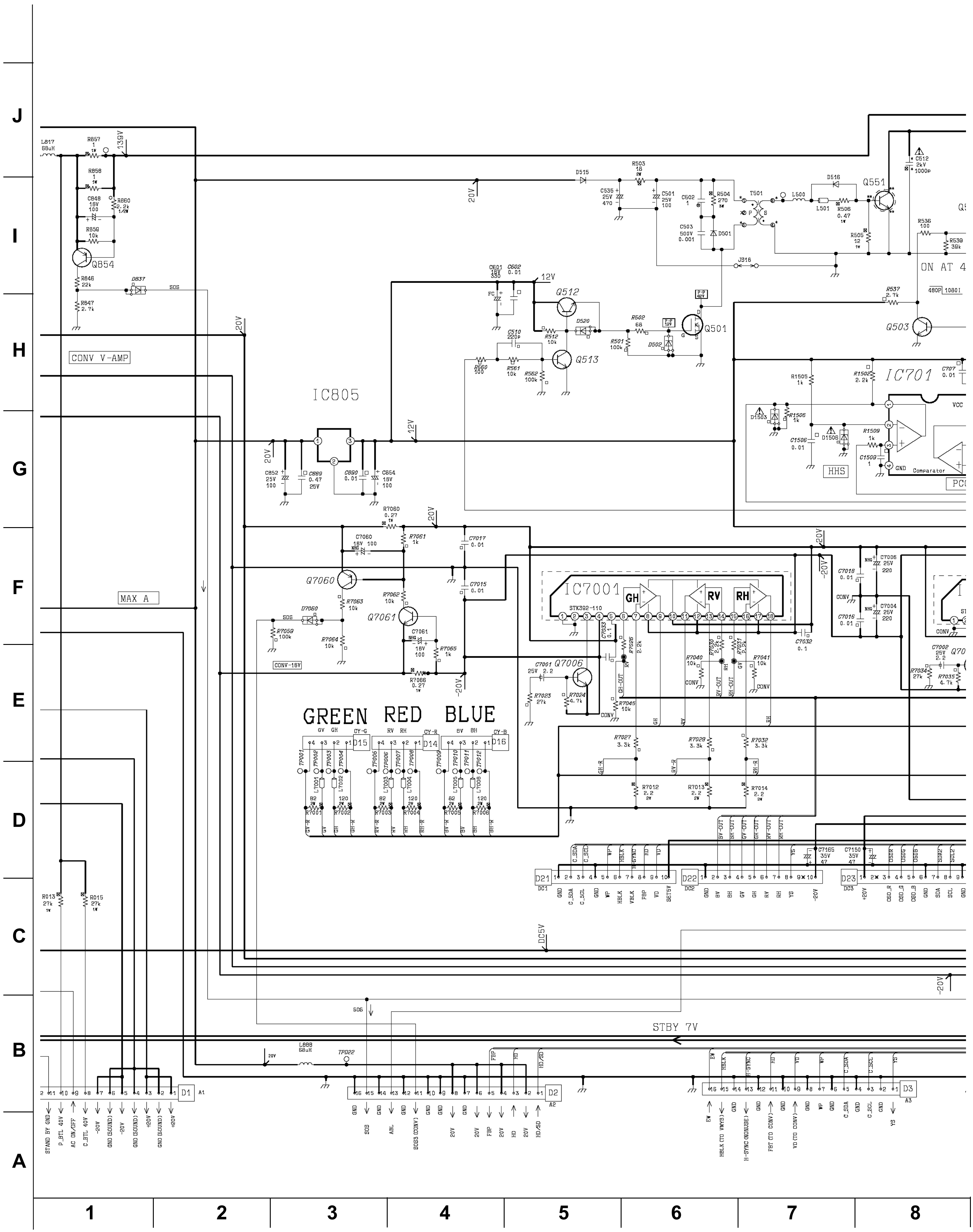
D-BOARD 1/5 TNP2AH046 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
H. V. DANGER
REVERSE FOR ORDER NO.

D-BOARD 1/2 TNP2AH046 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G



J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
HOT
COLD
HOT
COLD
IC802
IC811
IC802
T801
Q801
Q854
R840 100
R839 2.2k
R835 100
D34
C808 25V 100
SIG2
139V
L817 68uH
R857 1
R858 1
C848 16V 100
R860 2.2k 1/2W
R859 10k
R846 22k
R847 2.7k
D837
L808
L820
+30V-45V
C839 1kV 330p
D828
20V
L826 33u
TPD12
C837 25V 4700
CONV V-AMP
CONV
C841 25V 4700
+45V-30V
D829
L821
C842 1kV 330p
-20V
L827 33u
TPD11
R818 10 1/2W
P-P 400V
L810
L811
L805
L806
C814 2kV 1000p
C817 2kV 1000p
R808 0.12 1/2W
R810 0.12 1/2W
R811 0.12 1/2W
+190V-280V
C831 2kV 820p
140V
L815
C816 2kV 820p
D825
L816
C830 160V 470
SOUND
SIG2
CONV
C836 1kV 330p
L819
TPD13
L825 33u
D827
C834 35V 2200
MAX A
C806 AC125V 4700p
187V
C810 200V 1000
C844 1kV 330p
R880
D830
TPD10
AUDIO 23V
C843 35V 2200
C846 1kV 330p
C849 0.022
SOUND
C845 35V 2200
R881
D831
R800 5W 1.5
C825 1000p
RL802
STAND-BY
0.15W 5V 30mA
DC5V
SET 5V
R013 27k 1W
R015 27k 1W
R866 3.3k
R867 4.7k
AC ON/OFF
AC ON/OFF
AC ON/OFF
STBY 7V
STBY 7V
TUNER GND
TUNER GND
TUNER GND
TUNER GND
NC
NC
STBY 7V
STAND BY GND
P_BTL 40V
AC ON/OFF
C_BTL 40V
-20V
GND (SOUND)
-20V
GND (SOUND)
+20V



J
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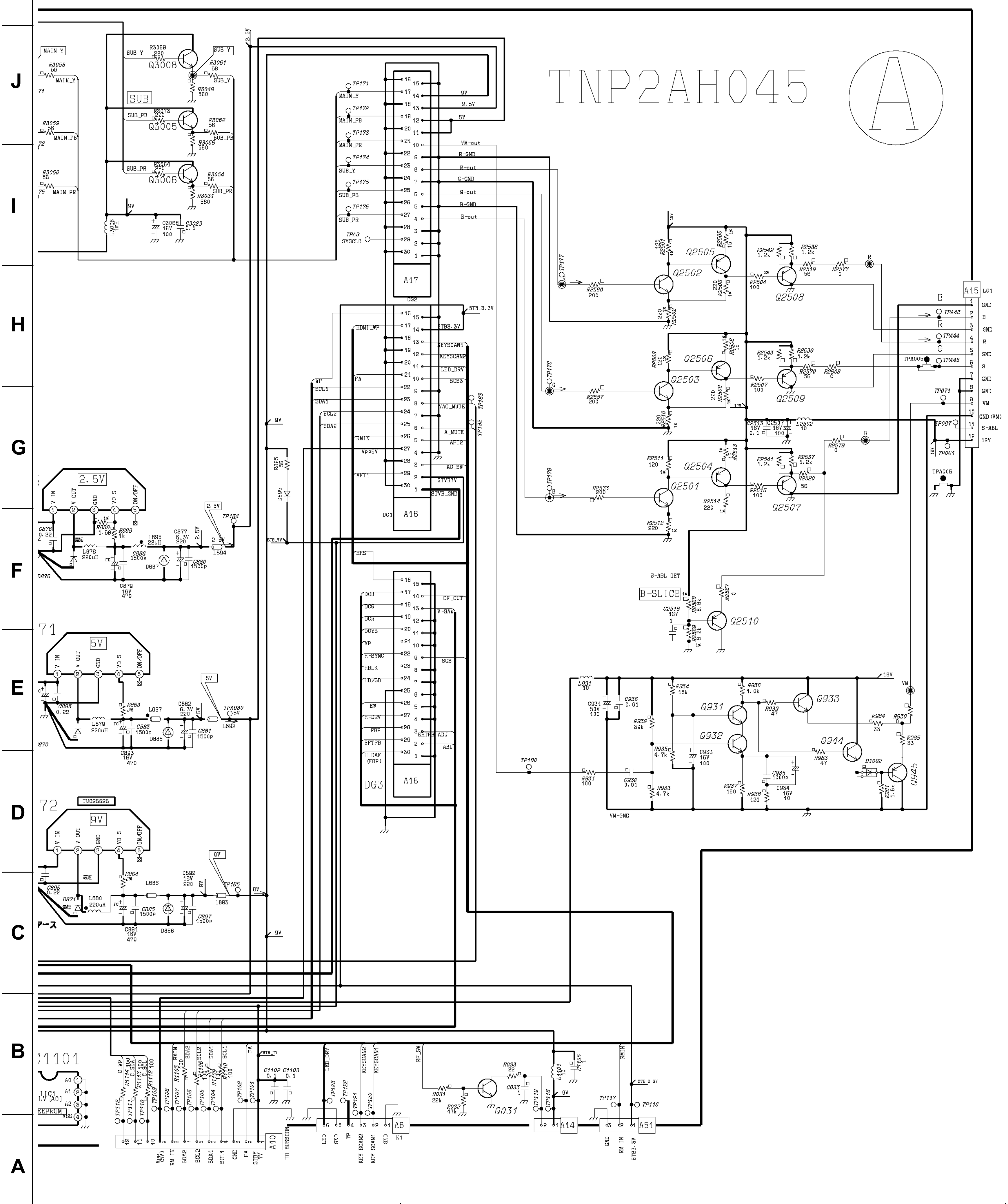
8
L817 68uH
R857 1 1W
139V
R858 1 1W
C848 16V 100
R860 2.2k 1/2W
R859 10k
Q854
R846 22k
R847 2.7k
D837
SOS
20V
CONV V-AMP
IC805
C852 25V 100
C889 0.47 25V
C890 0.01
C854 16V 100
12V
C601 16V 330
C602 0.01
Q512
R512 10k
D520
C510 220p
R560 100
R561 10k
R562 100k
Q513
R502 68
R501 100k
D502
Q501
D515
R503 18 2W
C535 25V 470
C501 25V 100
C502 1
R504 270 3W
C503 500V 0.001
D501
T501
L500
D516
L501
R506 0.47 1W
R505 12 1W
Q551
C512 2kV 1000p
R536 100
R539 39k
JS16
ON AT 4
R537 2.7k
480P 1080I
Q503
R1505 1k
R1502 2.2k
IC701
C707 0.01
D1503
R1506 1k
C1506 0.01
D1506
R1509 1k
C1509 1
VCC
GND
Comparator
HHS
PC
R7060 0.27 1W
C7060 16V 100
R7061 1k
C7017 0.01
C7015 0.01
Q7060
R7063 10k
R7062 10k
Q7061
D7060
R7059 100k
R7064 10k
C7061 16V 100
R7065 1k
R7066 0.27 1W
CONV-16V
-20V
MAX A
IC7001
STK392-110
GH
RV
RH
C7033 0.1
R7026 2.2k
C7032 0.1
R7030 2.2k
R7031 2.2k
R7040 10k
R7041 10k
GH-OUT
RV-OUT
RH-OUT
CONV
C7001 25V 2.2
Q7006
R7023 27k
R7024 4.7k
R7045 10k
C7018 0.01
C7006 25V 220
C7016 0.01
C7004 25V 220
C7002 25V 2.2
R7034 27k
R7035 4.7k
GREEN RED BLUE
GV GH CY-G D15
RV RH CY-R D14
BV BH CY-B D16
TP001 TP002 TP003 TP004
TP005 TP006 TP007 TP008
TP009 TP010 TP011 TP012
L7001 L7002 L7003 L7004 L7005 L7006
R7001 82 2W
R7002 120 2W
R7003 82 2W
R7004 120 2W
R7005 82 2W
R7006 120 2W
GV-R GV GH GH-R
RV-R RV RH RH-R
BV-R BV BH BH-R
R7027 3.3k
R7029 3.3k
R7032 3.3k
GH-R RV-R RH-R
R7012 2.2 2W
R7013 2.2 2W
R7014 2.2 2W
D21 DC1
GND C_SDA C_SCL GND WP HBLK VBLK FBP VD SET5V
D22 DC2
GND BV BH GV GH RV RH YS -20V
BV-OUT BH-OUT GV-OUT GH-OUT RV-OUT RH-OUT
C7165 35V 47
C7150 35V 47
D23 DC3
+20V OSD_R OSD_G OSD_B GND SDA SCL GND
R013 27k 1W
R015 27k 1W
DC5V
SOS
STBY 7V
L888 68uH
TPD22
D1 A1
STAND BY GND
P_BTL 40V
AC ON/OFF
C_BTL 40V
-20V
GND (SOUND)
-20V
GND (SOUND)
+20V
GND (SOUND)
+20V
D2 A2
GND SOS ABL GND SOS3 (CONV) GND GND 20V GND 20V FBP 20V HD 20V HD/SD
D3 A3
EW HBLK (TO VMVS) GND H-SYNC (NONUSE) GND FBT (TO CONV) GND VD (TO CONV) GND WP GND C_SDA GND C_SCL GND YS

D-BOARD 3/5 TNP2AH046 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G



TNP2AH045
A
J
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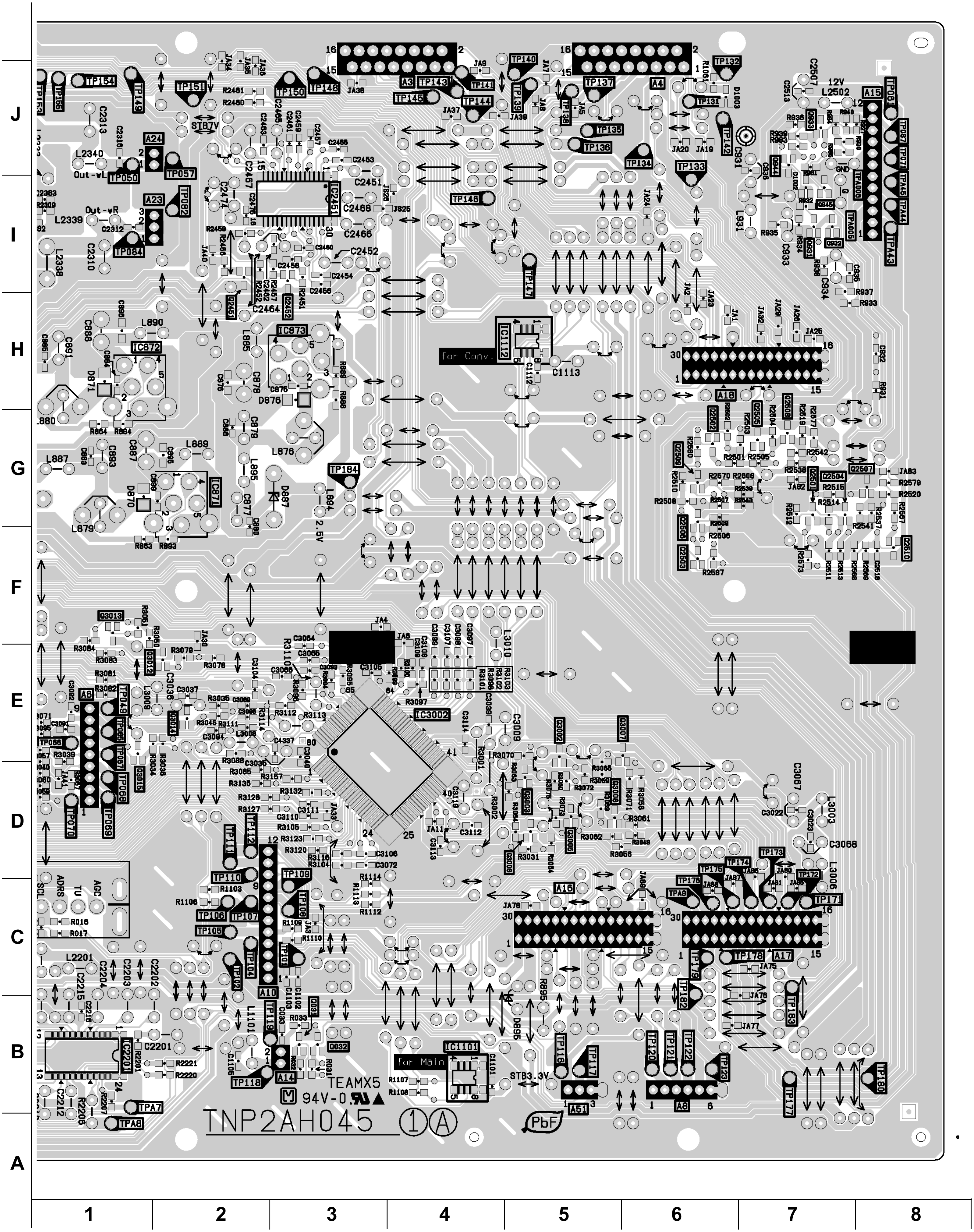
8
MAIN_Y
SUB_Y
SUB_PB
SUB_PR
SUB
Q3008
Q3005
Q3006
2.5V
5V
9V
TUC25625
A17
A16
A18
DG1
DG2
DG3
A15
LG1
A10
A8
A14
A51
TO BUSSCON
VM-out
R-GND
R-out
G-GND
G-out
B-GND
B-out
STB_3.3V
HDMI_WP
KEYSCAN1
KEYSCAN2
LED_DRV
SOS3
VAO_MUTE
A_MUTE
AFT2
AC_SW
STVB7V
STVB_GND
SCL1
SDA1
SCL2
SDA2
RMIN
Vpp5V
AFT1
DF_OUT
V-SAW
SOS
DCB
DCG
DCR
DCYS
VP
H-SYNC
HBLK
HD/SD
EW
H-DRV
FBP
EHTFB ADJ
ABL
H_DAF (FBP)
Q2501
Q2502
Q2503
Q2504
Q2505
Q2506
Q2507
Q2508
Q2509
Q2510
S-ABL DET
B-SLICE
Q931
Q932
Q933
Q944
Q945
D1002
18V
VM-GND
GND
R
G
B
VM
GND (VM)
S-ABL
12V
Q031
RF_SW
IC1101
EEPROM
V IN
V OUT
VD S
ON/OFF
VBB (5V)
RM IN
STBY 7V
LED
TP
KEY SCAN2
KEY SCAN1
STB3.3V



J
I
H
G
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A
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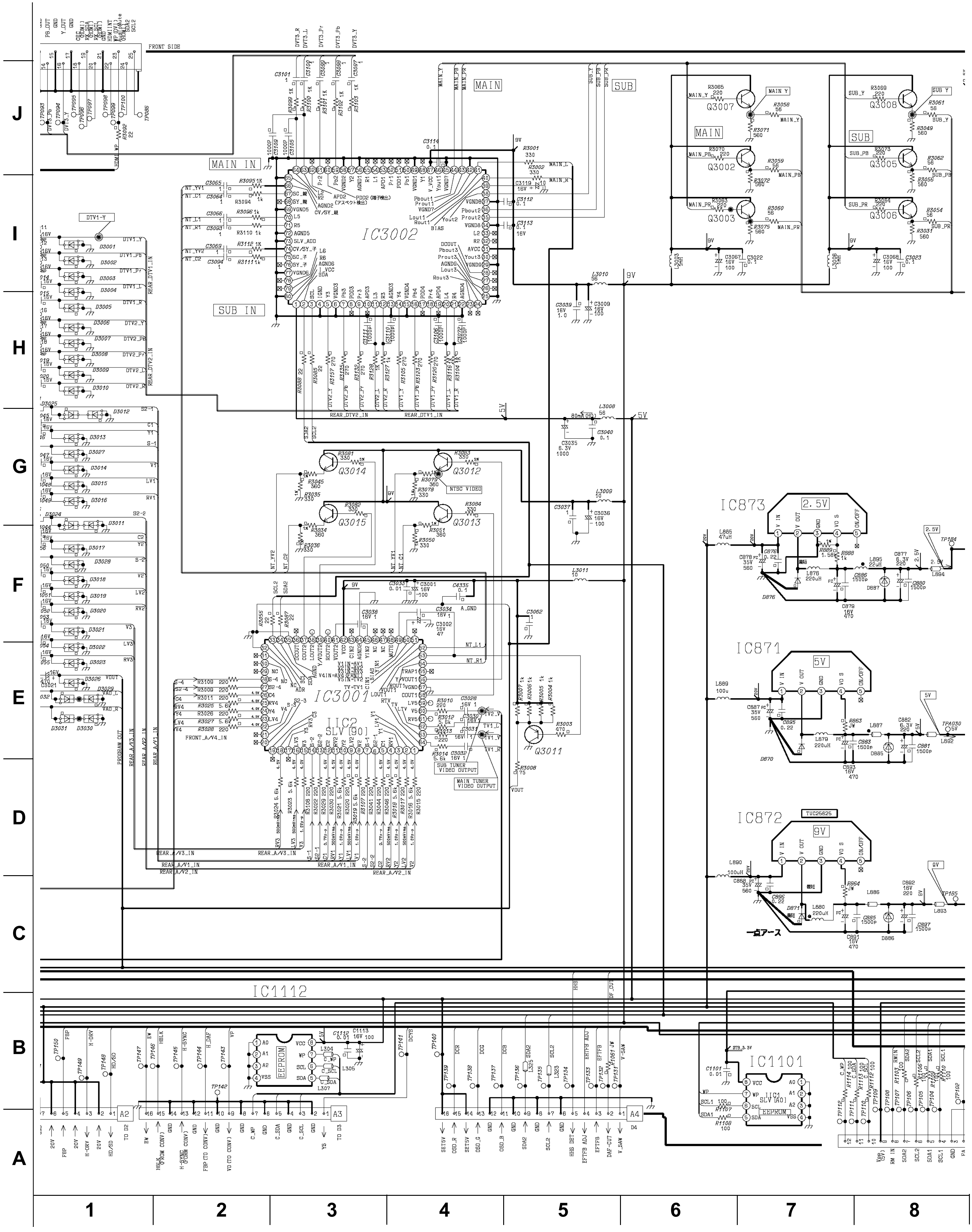
TP154
TP155
TP149
TP151
TP150
TP148
TP145
TP143
TP141
TP144
TP140
TP139
TP138
TP137
TP135
TP136
TP134
TP133
TP132
TP131
TP142
TP050
TP057
TP082
TP084
TP146
TP147
TP184
A3
A4
A15
A23
A24
A18
A6
A10
A14
A16
A17
A51
A8
STB7V
Out-wL
Out-wR
L2340
L2339
L2338
C2313
C2310
12V
L2502
C2507
C931
L931
IC2451
C2451
C2452
C2464
C2466
C2468
C2467
C2474
IC873
IC872
IC871
IC1112
for Conv.
C1113
D871
D876
D870
D887
L890
L889
L876
L887
L879
L880
L894
L895
2.5V
IC3002
L3010
L3009
L3003
L3006
C3009
C3067
C3068
C3022
TP049
TP066
TP067
TP068
TP069
TP070
TP086
TP111
TP112
TP110
TP109
TP108
TP106
TP107
TP105
TP104
TP102
TP101
TP119
TP118
TP116
TP117
TP120
TP121
TP122
TP123
TP171
TP172
TP173
TP174
TP175
TP176
TPA9
TP178
TP179
TP182
TP183
TP177
TP180
TPA7
TPA8
ADRS
TU
AGC
SCL
L2201
C2201
IC2201
L1101
IC1101
for Main
STB3.3V
D895
R895
TEAMX5
94V-0
TNP2AH045 ①Ⓐ
PbF

A-BOARD 2/2 TNP2AH045 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


FRONT SIDE
MAIN IN
SUB IN
MAIN
SUB
IC3002
IC3001
IIC2
SLV[90]
Q3007
Q3002
Q3003
Q3008
Q3005
Q3006
MAIN Y
SUB Y
Q3014
Q3012
Q3015
Q3013
Q3011
NTSC VIDEO
SUB TUNER VIDEO OUTPUT
MAIN TUNER VIDEO OUTPUT
REAR_DTV1_IN
REAR_DTV2_IN
REAR_A/V1_IN
REAR_A/V2_IN
REAR_A/V3_IN
FRONT_A/V4_IN
PROGRAM OUT
DTV1-Y
IC873
2.5V
IC871
5V
IC872
9V
TUC25625
一点アース
IC1112
EEPROM
IC1101
IIC1
SLV[A0]
A2
A3
A4
J
I
H
G
F
E
D
C
B
A
1
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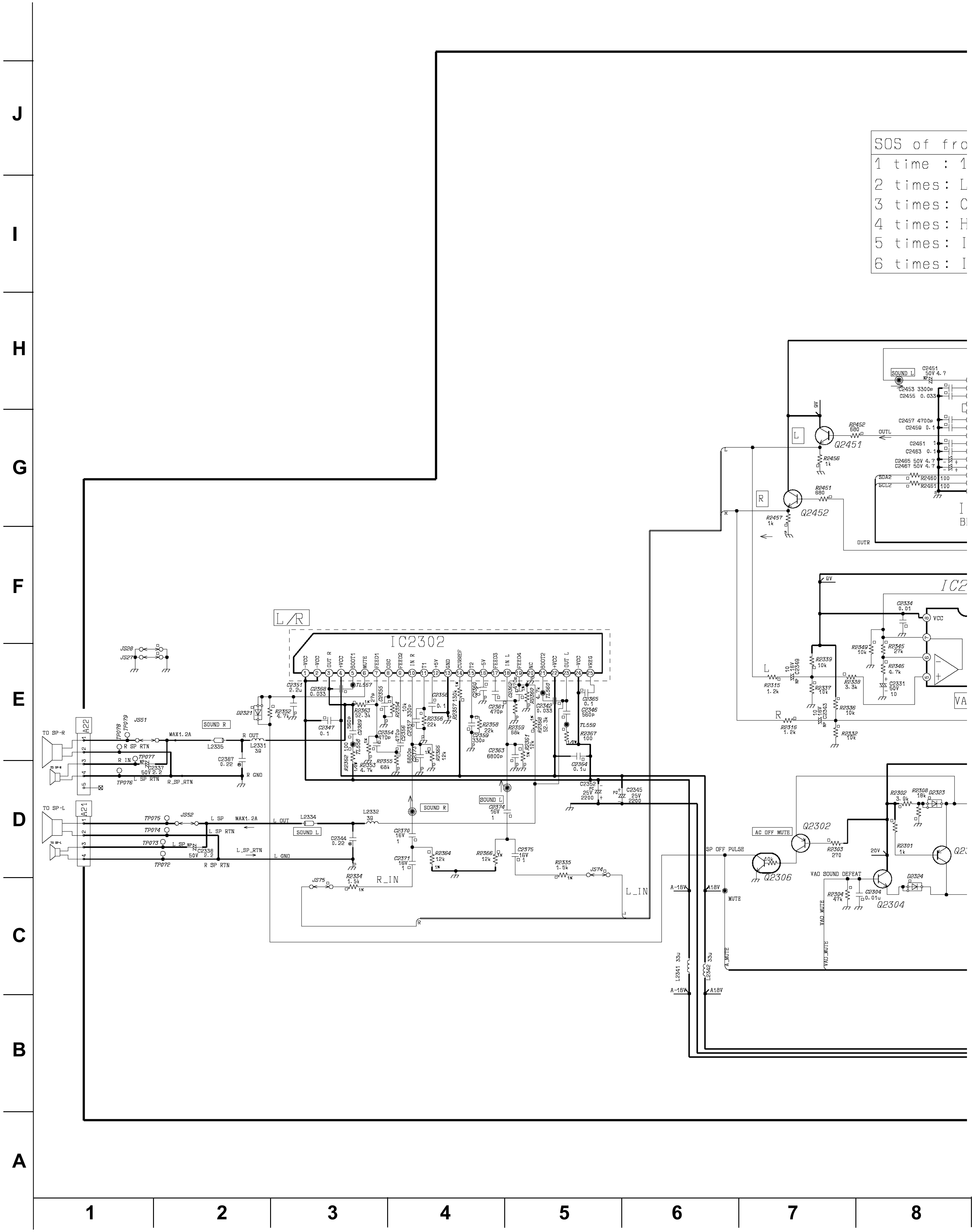
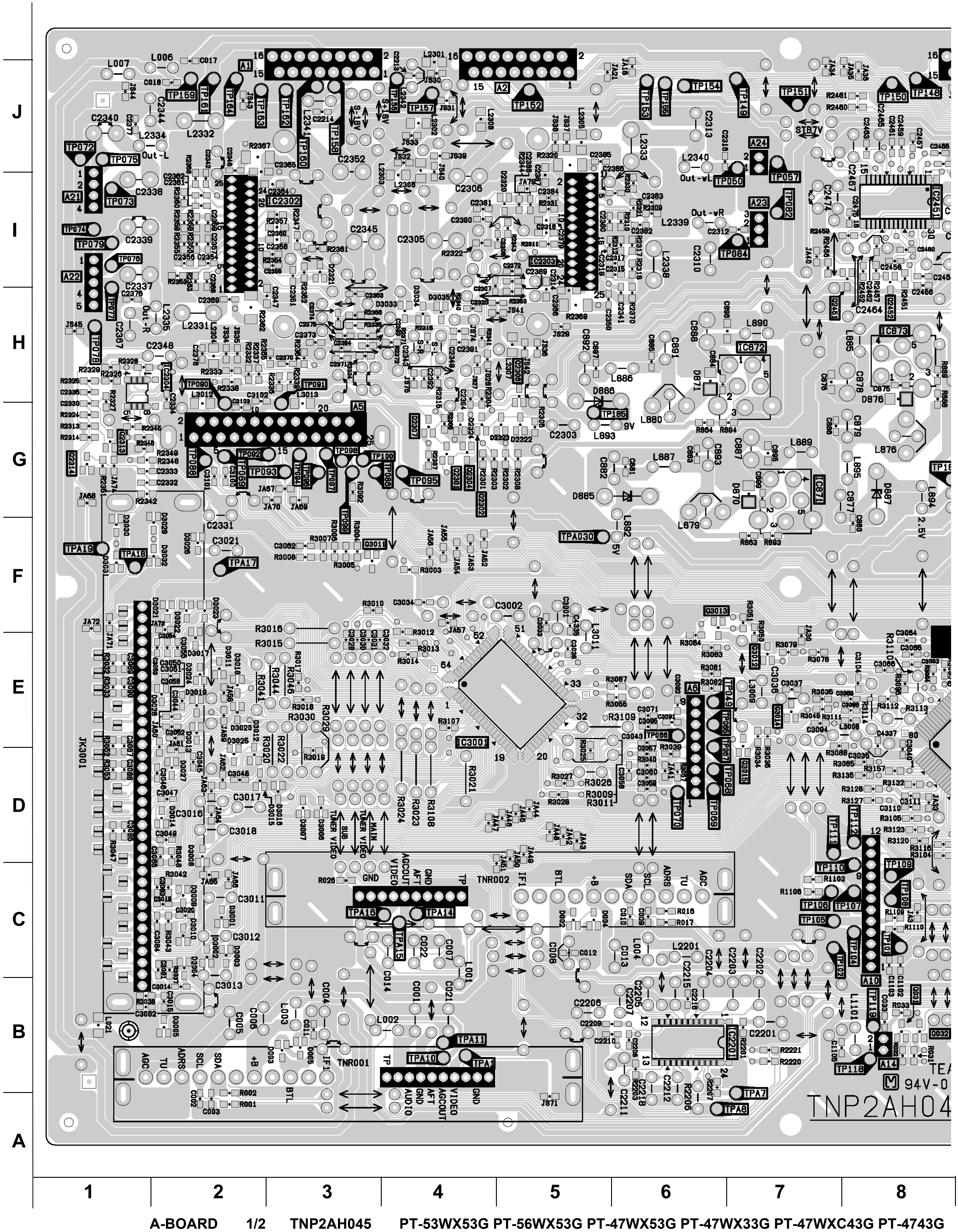

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
SOS of fro
1 time : 1
2 times: L
3 times: C
4 times: H
5 times: I
6 times: I
L/R
IC2302
-VCC
OUT R
+VCC
BOOT1
MUTE
FEED1
OSC
FEED2
IN R
T1
+5V
GND
CURREF
T2
-5V
FEED3
IN L
FEED4
NC
BOOT2
OUT L
VREG
TO SP-R
TO SP-L
A22
A21
R SP RTN
R IN
L SP RTN
R_SP_RTN
MAX1.2A
SOUND R
SOUND L
R OUT
R GND
L2335
L2331 39
C2367 0.22
L SP
L OUT
L2334
L2332 39
C2344 0.22
L GND
L SP RTN
L_SP_RTN
R SP RTN
TP072
TP073
TP074
TP075
TP076
TP077
TP078
TP079
JS51
JS52
JS27
JS28
JS75
JS74
D2321
R2352 4.7k
C2351 2.2u
C2368 0.033
C2347 0.1
TL557
TL558
TL559
TL560
R2363 52.3k
R2353 4.7k
R2355 68k
R2356 22k
R2358 22k
R2359 68k
R2368 52.3k
R2367 100
C2352 25V 2200
C2345 25V 2200
C2370 16V 1
C2371 16V 1
C2374 16V 1
C2375 16V 1
R2364 12k
R2366 12k
R2334 1.5k
R2335 1.5k
R_IN
L_IN
SP OFF PULSE
AC OFF MUTE
Q2306
Q2302
Q2304
R2302 3.9k
R2308 18k
D2323
D2324
R2303 270
R2301 1k
20V
VAO SOUND DEFEAT
R2304 47k
C2304 0.01u
VAO MUTE
A_MUTE
MUTE
A-18V
A18V
L2341 33u
L2342 33u
9V
Q2451
Q2452
R2452 680
R2451 680
R2456 1k
R2457 1k
OUTL
OUTR
C2451 50V 4.7
C2453 3300p
C2455 0.033
C2457 4700p
C2459 0.1
C2461 1
C2463 0.1
C2465 50V 4.7
C2467 50V 4.7
SDA2
SCL2
R2460 100
R2461 100
IC2
C2334 0.01
VCC
R2349 10k
R2345 27k
R2346 4.7k
R2339 10k
C2349 10 16V
R2315 1.2k
R2316 1.2k
R2337 10k
R2338 3.3k
C2331 50V 10
R2336 10k
C2343 10 16V
R2332 10k
VA

A-BOARD 1/4 TNP2AH045 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


J
I
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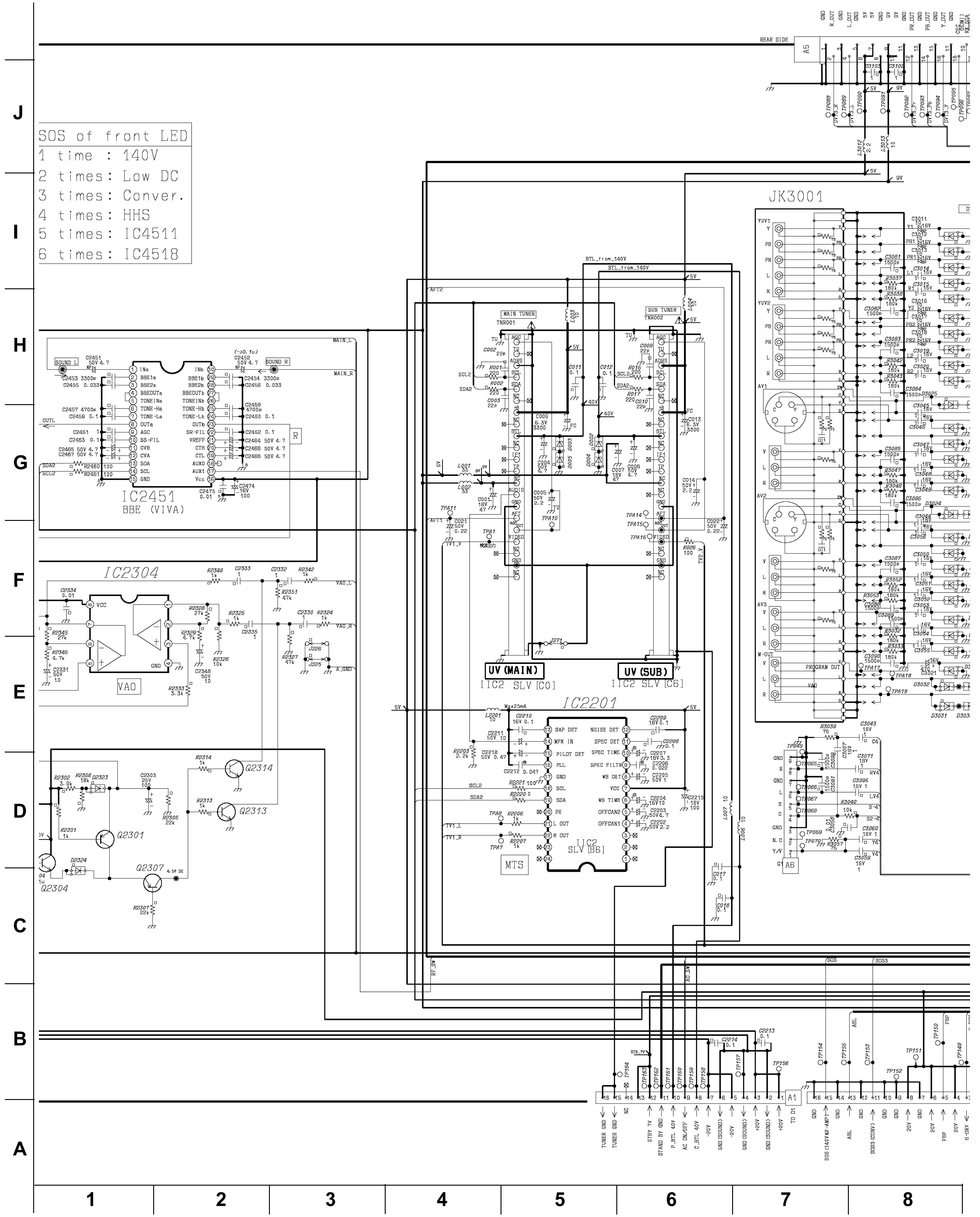
7
8
JK3001
IC2302
IC2303
IC2304
IC3001
IC2201
IC2451
IC872
IC871
IC873
TNR001
TNR002
A1
A2
A5
A6
A10
A14
A21
A22
A23
A24
TEA
94V-0
TNP2AH04

A-BOARD 1/2 TNP2AH045 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G


SOS of front LED
1 time : 140V
2 times: Low DC
3 times: Conver.
4 times: HHS
5 times: IC4511
6 times: IC4518
IC2451
BBE (VIVA)
SOUND L
SOUND R
MAIN_L
MAIN_R
OUTL
R
IC2304
VAO
VAO_L
VAO_R
A_GND
Q2314
Q2313
Q2301
Q2307
Q2304
4.5V DC
MAIN TUNER
TNR001
SUB TUNER
TNR002
BTL_from_140V
AFT2
AFT1
TV1_V
TV2_V
UV (MAIN)
IIC2 SLV [C0]
UV (SUB)
IIC2 SLV [C6]
IC2201
MTS
IIC2 SLV [B6]
SAP DET
MPX IN
PILOT DET
PLL
GND
SCL
SDA
PE
L OUT
R OUT
NOISE DET
SPEC DET
SPEC TIME
SPEC FILTR
WB DET
VCC
WB TIME
OFFCAN2
OFFCAN1
Max25mA
JK3001
YUV1
YUV2
AV1
AV2
AV3
M-OUT
PROGRAM OUT
REAR SIDE
A5
A6
A1
SOS
SOS3
RF_SW
AC_SW
STB_TV
TUNER GND
NC
STBY 7V
STAND BY GND
P_BTL 40V
AC ON/OFF
C_BTL 40V
-20V
GND (SOUND)
+20V
TO D1
SOS (140V&V-AMP)
ABL
SOS3 (CONV)
20V
FBP
H-DRV
J
I
H
G
F
E
D
C
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A
1
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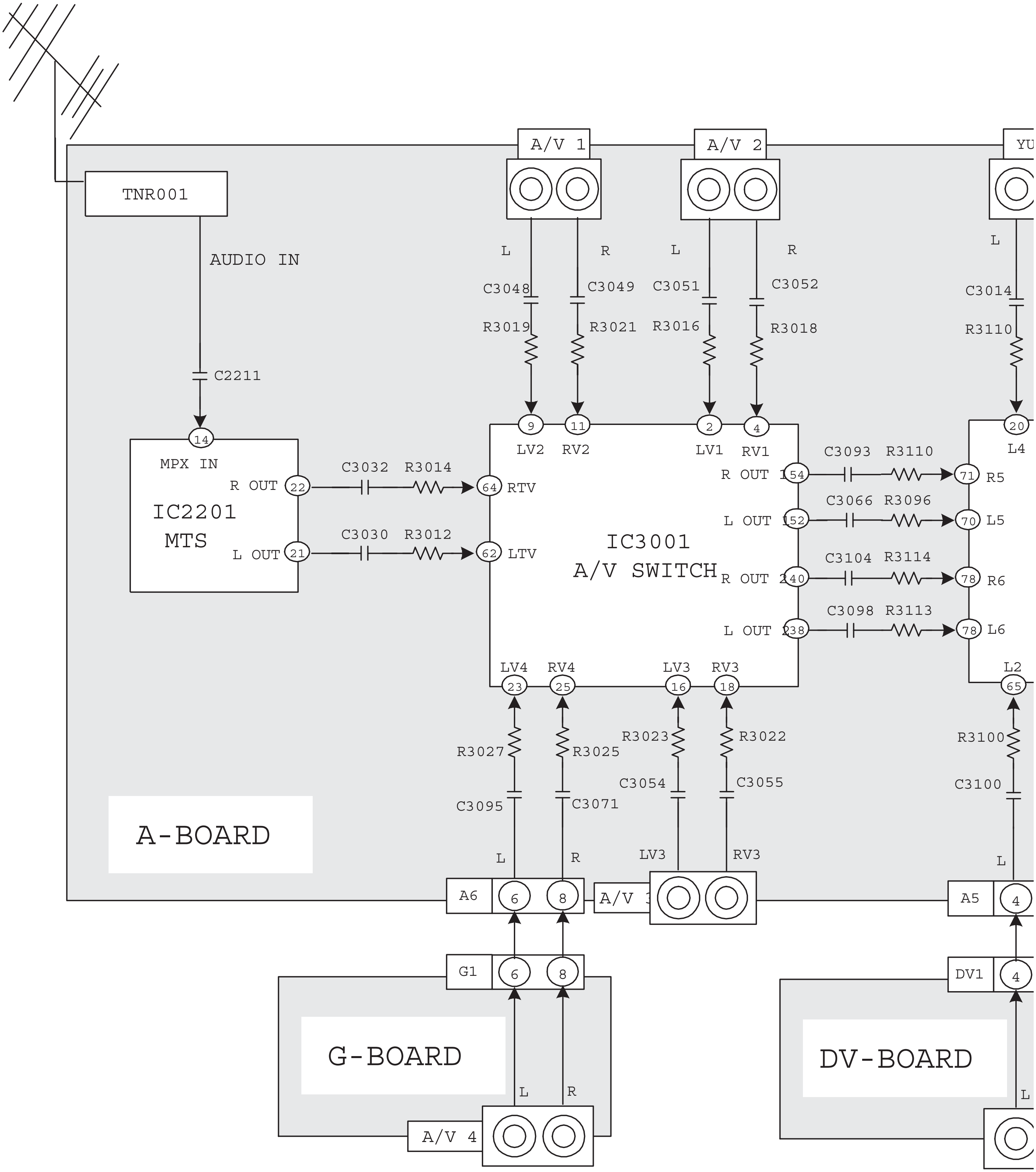
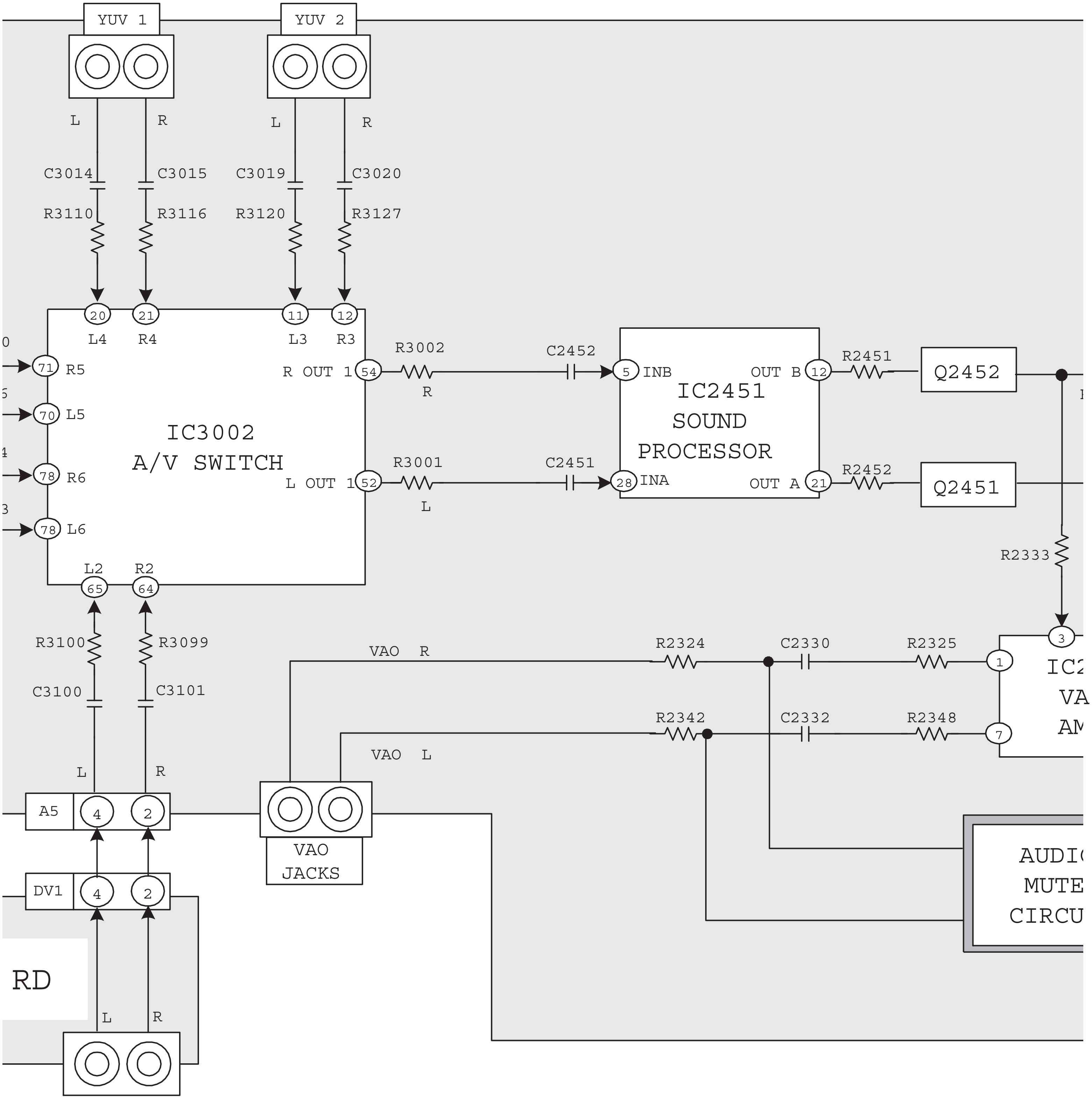
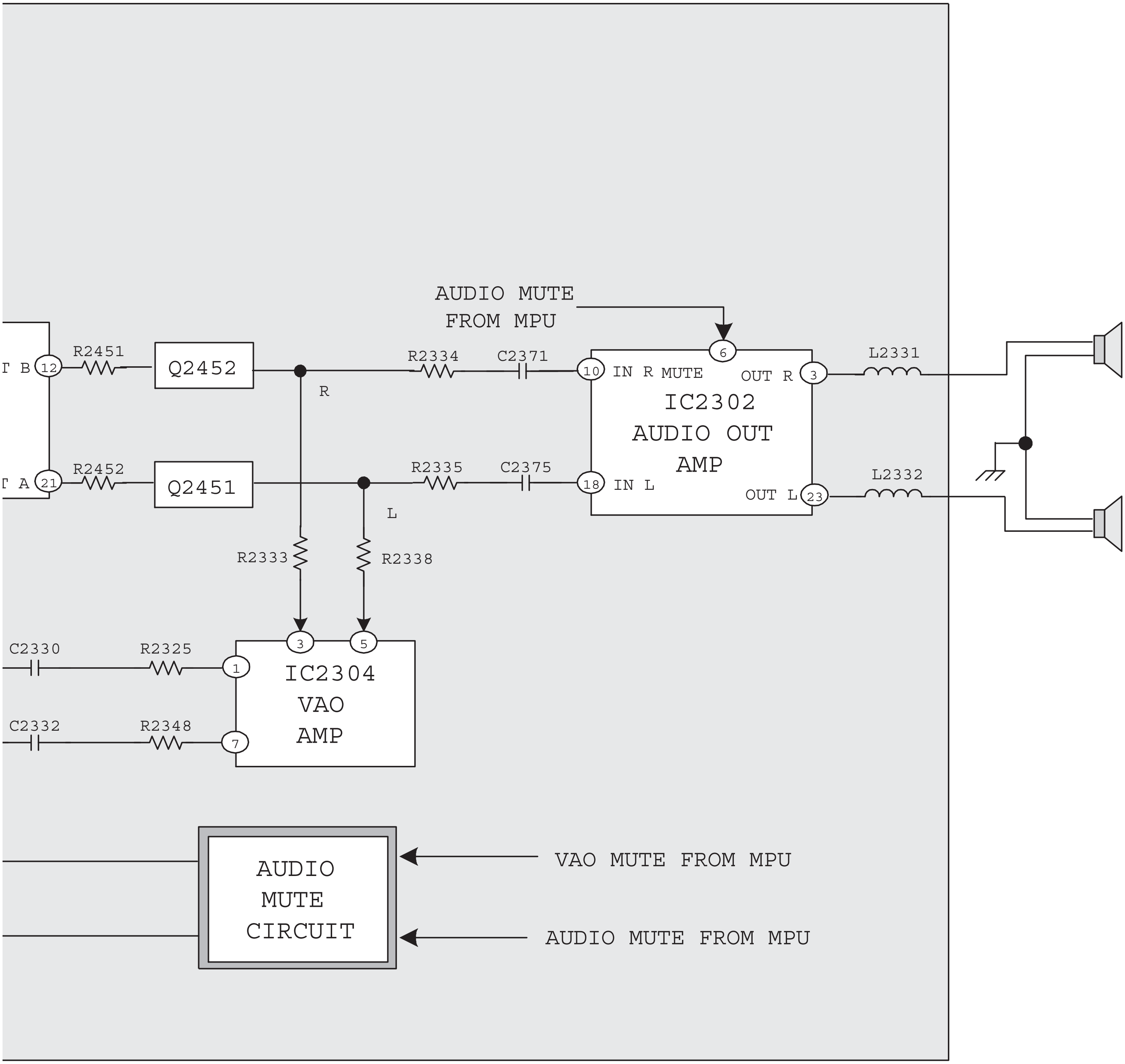

A/V 1
A/V 2
YU
TNR001
AUDIO IN
C2211
14
MPX IN
R OUT
22
L OUT
21
IC2201
MTS
C3032
R3014
C3030
R3012
64
RTV
62
LTV
L
R
L
R
L
C3048
C3049
C3051
C3052
C3014
R3019
R3021
R3016
R3018
R3110
9
11
2
4
20
LV2
RV2
LV1
RV1
L4
IC3001
A/V SWITCH
R OUT 1
54
L OUT 1
52
R OUT 2
40
L OUT 2
38
C3093
R3110
C3066
R3096
C3104
R3114
C3098
R3113
71
R5
70
L5
78
R6
78
L6
LV4
RV4
LV3
RV3
L2
23
25
16
18
65
R3027
R3025
R3023
R3022
R3100
C3095
C3071
C3054
C3055
C3100
A-BOARD
L
R
LV3
RV3
L
A6
6
8
A/V 3
A5
4
G1
6
8
DV1
4
G-BOARD
DV-BOARD
L
R
L
A/V 4

**AUDIO BLOCK DIAGRAM 1/3 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G**

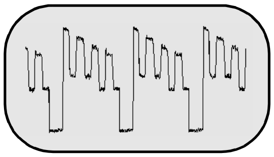

YUV 1
YUV 2
L
R
L
R
C3014
C3015
C3019
C3020
R3110
R3116
R3120
R3127
20
21
11
12
L4
R4
L3
R3
0
71
R5
5
70
L5
4
78
R6
3
78
L6
IC3002
A/V SWITCH
R OUT 1
54
L OUT 1
52
L2
R2
65
64
R3002
R
R3001
L
C2452
C2451
5
INB
28
INA
IC2451
SOUND
PROCESSOR
OUT B
12
OUT A
21
R2451
R2452
Q2452
Q2451
R2333
3
R3100
R3099
C3100
C3101
L
R
VAO R
VAO L
R2324
C2330
R2325
R2342
C2332
R2348
1
7
IC2
VA
AM
A5
4
2
DV1
4
2
VAO
JACKS
AUDI
MUTE
CIRCU
RD
L
R

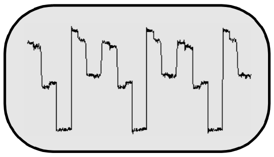
AUDIO BLOCK DIAGRAM 2/3 PT-53WX53G PT-56WX53G PT-47WX53G PT-47WX33G PT-47WXC43G PT-4743G

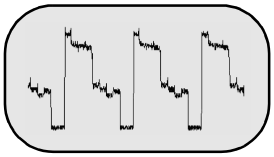


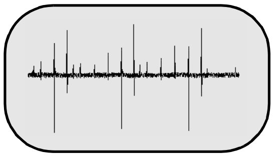
AUDIO MUTE
FROM MPU
T B
12
R2451
Q2452
R
R2334
C2371
10
IN R
MUTE
6
OUT R
3
IC2302
AUDIO OUT
AMP
L2331
T A
21
R2452
Q2451
L
R2335
C2375
18
IN L
OUT L
23
L2332
R2333
R2338
3
5
C2330
R2325
1
IC2304
VAO
AMP
C2332
R2348
7
AUDIO
MUTE
CIRCUIT
VAO MUTE FROM MPU
AUDIO MUTE FROM MPU

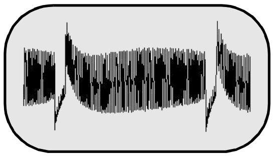
# A-Board TNP2AH045

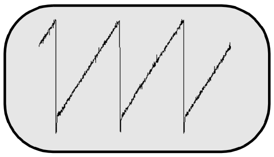

① **5.84 Vp-p**
A15 PIN 2 (BLUE OUT)

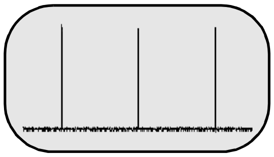

② **5.60 Vp-p**
A15 PIN 4 (RED OUT)

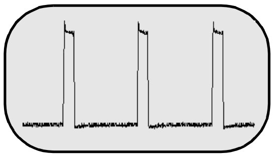

③ **6.32 Vp-p**
A15 PIN 6 (GREEN OUT)

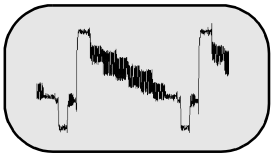

④ **2.74 Vp-p**
A15 PIN 9 (VM OUT)

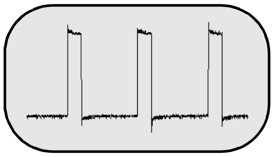

⑤ **2.52 Vp-p**
A15 PIN 11 (S-ABL)

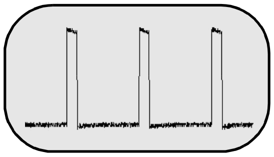

⑥ **1.15 Vp-p**
A4 PIN 1 (V-SAW)

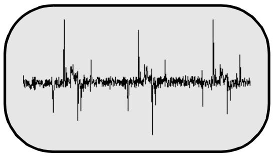

⑦ **3.52 Vp-p**
A3 PIN 9 (VD TO CONV)

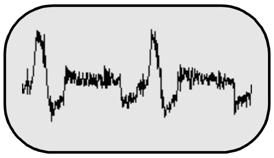

⑧ **3.88 Vp-p**
A3 PIN 11 (FBP TO CONV)

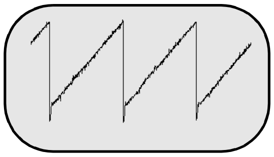

⑨ **1.00 Vp-p**
TNR001 (MAIN VIDEO)

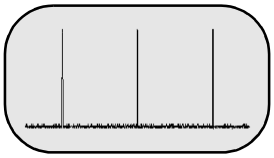

⑩ **4.36 Vp-p**
A3 PIN 15 (HBLK FROM CONV)

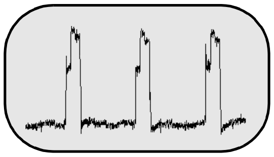

⑪ **3.6 Vp-p**
A3 PIN 16 (EW)

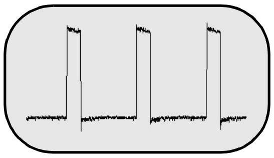

⑫ **0.26 Vp-p**
A2 PIN 1 (HD/SD)

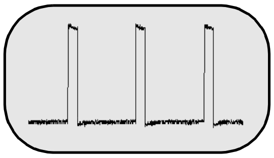

⑬ **0.16 Vp-p**
A2 PIN 11 (SOS3 CONV)

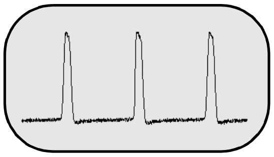

⑭ **1.24 Vp-p**
A18 PIN 13 (EHTFB ADJ)

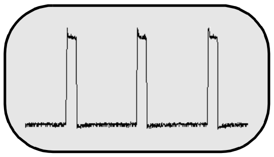

⑮ **3.44 Vp-p**
A18 PIN 21 (VP)


⑯ **0.472 Vp-p**
A18 PIN 22 (H-SYNC)

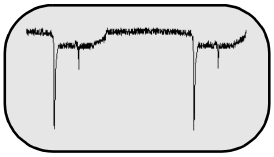

⑰ **4.12 Vp-p**
A18 PIN 23 (HBLK)

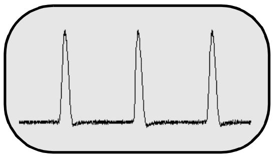

⑱ **3.64 Vp-p**
A18 PIN 26 (EW)

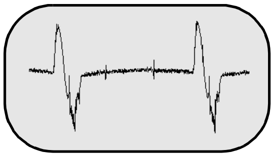

⑲ **5.65 Vp-p**
A18 PIN 28 (FBP)

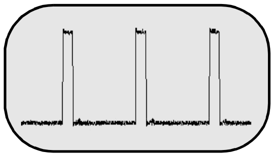

⑳ **3.8 Vp-p**
A18 PIN 30 (H-DAF FBP)

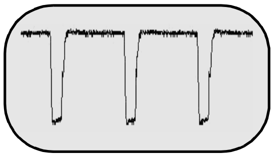
## D-Board TNP2AH046


㉑ **14.8 Vp-p**
Q551-B

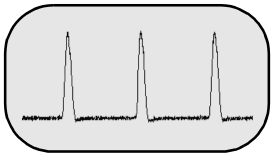

㉒ **1.6K Vp-p**
Q551-C


㉓ **0.65 Vp-p**
IC701 PIN 3


㉔ **3.56Vp-p**
IC701 PIN 6


㉕ **13.0 Vp-p**
IC701 PIN 7

## LG-Board TNP2AA146


㉖ **28.0 Vp-p**
TP22 (HEATER)

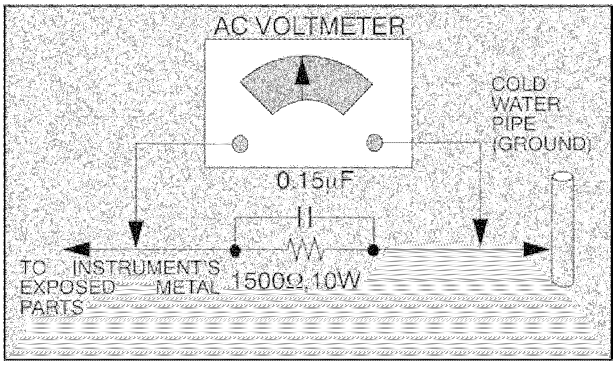
# 1. Safety precautions

**General guidelines**
**An isolation transformer should always be used during the servicing of a receiver whose chassis is not isolated from AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injuryfrom electrical shocks. It will also protect the receiver from being damaged by accidental shorting that may occur during servicing.**
**When servicing, observe the original lead dress, especially in the high voltage circuit. Replace all damaged parts (also parts that show signs of overheating.)**
**Always replace protective devices, such as fish paper, isolation resistors and capacitors, and shields after servicing the receiver. Use only manufacturer's recommended rating for fuses, circuits breakers, etc.**
**High potentials are present when this receiver is operating. Operation of the receiver without the rear cover introduces danger for electrical shock. Servicing should not be performed by anyone who is not thoroughly familiar with the necessary precautionswhen servicing high voltage equipment.**
**Extreme care should be practiced when handling the picture tube. Rough handling may cause it to implode due to atmospheric pressure. (14.7 lbs per sq. in.). Do not nick or scratch the glass or subject it to any undue pressure. When handling, usesafety goggles and heavy gloves for protection.**
**Discharge the picture tube by shorting the anode to chassis ground (not to the cabinet or to other mounting hardware). When discharging connect cold ground (i.e. dag ground lead) to the anode with a wellinsulated wire or use a grounding probe.Avoid prolonged exposure at close range to unshielded areas of the picture tube to prevent exposure to x ray radiation.**
**The test picture tube used for servicing the chassis at the bench should incorporate safety glass and magnetic shielding. The safety glass provide shielding for the tube viewing area against x ray radiation as well as implosion. The magnetic shieldlimits the x ray radiation around the bell of the picture tube in addition to the restricting magnetic effects. When using a picture tube test jig for service, ensure that the jig is capable of handling 50kV without causing x ray radiation.**
**Before returning a serviced receiver to the owner, the service technician must thoroughly test the unit to ensure that is completely safe to operate. Do not use a line isolation transformer when testing.**

**Leakage current cold check**
**Unplug the A.C. cord and connect a jumper between the two plug prongs.Measure the resistance between the jumpered AC plug and expose metallic parts such as screwheads, antenna terminals, control shafts, etc. If the exposed metallic part has a returnpath to the chassis, the reading should be between 240kΩ and 5.2MΩ. If the exposed metallic part does not have a return path to the chassis, the reading should be infinite.**

**Leakage current hot check**
**Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during the check. Connect a 1.5kΩ 10 watt resistor in parallel with a 0.15 μF capacitor between an exposed metallic part and ground. Use earth ground, for example a water pipe.**
**Using a DVM with a 1000 ohms/volt sensitivity or higher, measure the AC potential across the resistor. Repeat the procedure and measure the voltage present with all other exposed metallic parts.**
**Verify that any potential does not exceed 0.75 volt RMS. A leakage current tester (such a Simpson model 229, Sencore model PR57 or equivalent) may be used in the above procedure, in which case any current measure must not exceed 0.5 milliampere.If any measurement is out of the specified limits, there is a possibility of a shock hazard and the receiver must be repaired and rechecked before it is returned to the customer.**

**Hot check circuit**



**Insulation test**
**Connect an insulation tester between an exposed metallic part and A.C. line. Apply 1080VAC/60Hz for 1 second. Confirm that the current measurement is 0.5mA ~ 2.0mA. Repeat test with other metallic exposed parts.**

**X ray radiation**

**WARNING**
**The potential source of x ray radiation in the PTV set is in the high voltage section and the picture tube.**

**NOTE**
**It is important to use an accurate, calibrated high voltage meter.**

**Apply all black video signals (1080i) and confirm high voltage measures 31.5 ± 1.0kV. If the high voltage is not within the range, change C514 to 1800pF, 2000pF, 2400pF or 2700pF until the desired value is obtained.ApplyNTSC white pattern and confirm the high voltage measures 30.1 ± 1.5kV. Apply HD 1080i white pattern and confirm the high voltage measures 30.1 ± 1.5kV.**

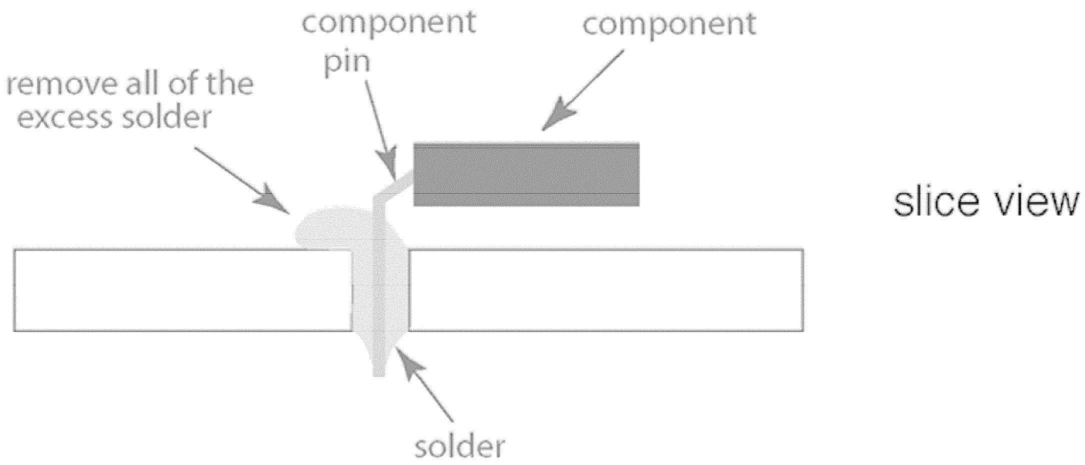
# 2. About lead free solder (PbF)

**NOTE**
**Lead is listed as (Pb) in the periodic table of elements. / In the information below, Pb will refer to lead solder, and PbF will refer to Lead Free Solder. / The lead free solder used in our manufacturing process and discussed below is (Sn+Ag+Cu). / Thatis Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.**

**This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For / service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be / used. / PCBs manufacturedusing lead free solder will have the "PbF" or a leaf symbol stamped on the / back of PCB.**

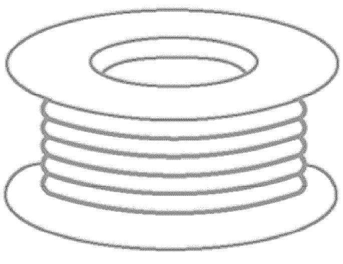
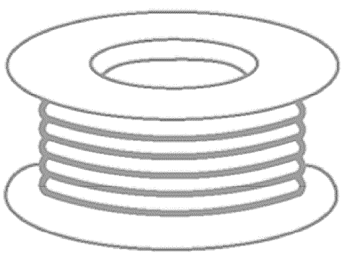
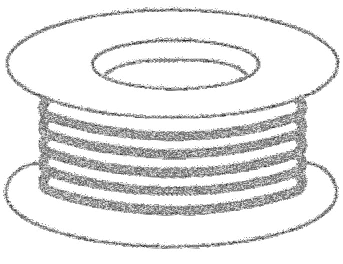
**CAUTION**

- **Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30 ~ 40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).**
- **Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C). / If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If thisis not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.**
- **After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side.**



**Suggested Pb free solder**

**There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also beused.**

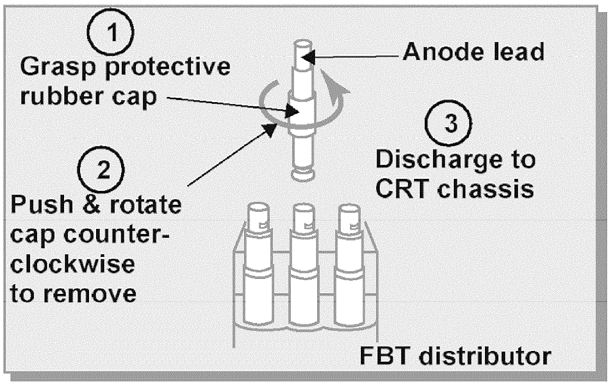
| 0.3mm X 100g | 0.6mm X 100g | 1.0mm X 100g |
|---|---|---|
|  |  |  |

# 3. Important safety tests

**Measuring H.V.**

**The anode caps are cemented to the CRTs. To gain access for high voltage measurement, remove the red CRT's anode lead from the flyback transformer distributor. Grasp the anode lead protective cap at its bottom and squeeze it against thelocking cap body inside, rotate 1/4 turn counter clockwise and pull the anode lead sleeve out of the FBT distributor. Connect a high voltage positive lead from your H.V. meter to the FBT distributor, and the common negative lead to cold ground**

**FBT leads removal**


①
Grasp protective rubber cap
Anode lead
③
Discharge to CRT chassis
②
Push & rotate cap counter-clockwise to remove
FBT distributor

**Note:**

**Reinsert the anode lead into the FBT distributor until it is tightly and fully seated. Turn the locking cap clockwise to lock in place.**

**(EHT) Protector operation check**

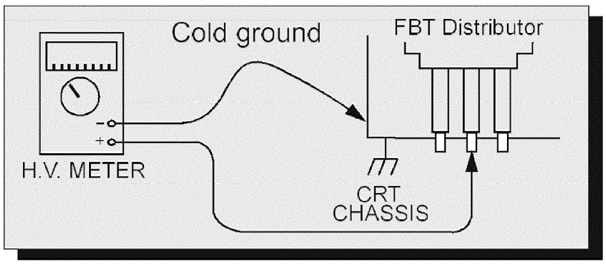
**With the cabinet back removed, apply a nominal 120V A.C. to the PTV.**

**Over voltage test**

**Preparation:**

1. **Turn PTV "OFF"**
2. **Connect a NTSC signal generator to the antenna terminal.**
3. **Connect DVM positive lead to D31 pin 2 and negative lead to D31 pin 1 on D-Board**

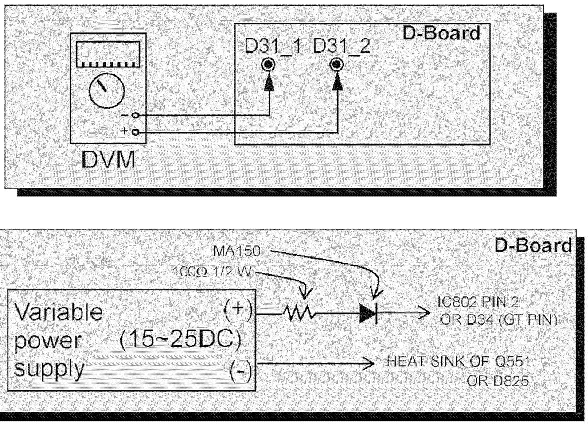
**H.V. measurement**


Cold ground
FBT Distributor
H.V. METER
CRT
CHASSIS

4. **Connect a H.V. meter (static type, class 0.1) with high voltage leads to**

**high voltage distributor on FBT.**

**DVM and power supply connection**


D-Board
D31_1
D31_2
−
+
DVM
MA150
100Ω 1/2 W
D-Board
Variable power supply
(+)
(15~25DC)
(-)
IC802 PIN 2 OR D34 (GT PIN)
HEAT SINK OF Q551 OR D825

**5. Connect the 15 ~ 25 V DC variable power supply positive lead to D34 or IC802 pin 2 (D Board) and negative lead to heat sink of Q551 or D825**

**Procedures:**

1. **Apply a NTSC white pattern.**
2. **Turn PTV ON.**
3. **Adjust the picture or brightness controls so that the DVM reads 12.4 ± 0.4 volts.**
4. **Increase the variable power supply until set turns off. The set should turn off at 12.4 ± 0.4 volts (DVM) and high voltage less than 36.4kV.**
5. **If the DVM reading is other than 12.4 ± 0.4 volts, readjust picture or brightness control and repeat steps 3.**
6. **Turn off the variable supply and confirm that the set will turn on with the remote control.**

# 4. Service notes

**NOTE**
**These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.**

**Leadless chip component (surface mount)**
**Chip components must be replaced with identical chips due to critical foil track spacing. There are no**

**holes in the board to mount standard transistors or diodes. Some chips capacitor or resistor board solder pads may have holes through the board,however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitor may also be limited for the same reason. It is recommended that identical components be used.**

**Chip resistor have a three digit numerical resistance code, 1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6k Ω resistor, 0 = 0 Ω (jumper).**

**Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.**

**Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.**

**Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.**

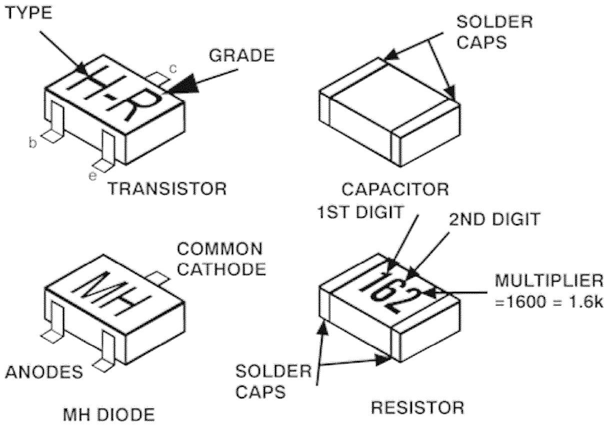
### Component removal

1. **Use solder wick to remove solder from component end caps or terminal.**
2. **Without pulling up, carefully twist the component with tweezers to break the adhesive.**
3. **Do not reuse removed leadless or chip components since they are subject to stress fracture during removal.**

### Chip component installation

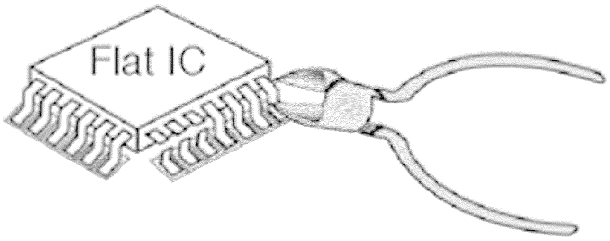
1. **Put a small amount of solder on the board soldering pads.**
2. **Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds.**

Chip components

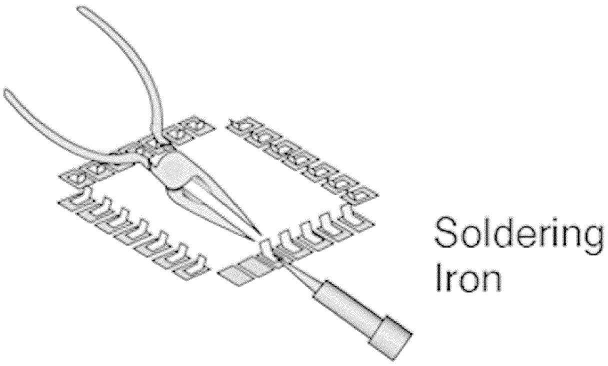


### How to replace flat ic (required tools)

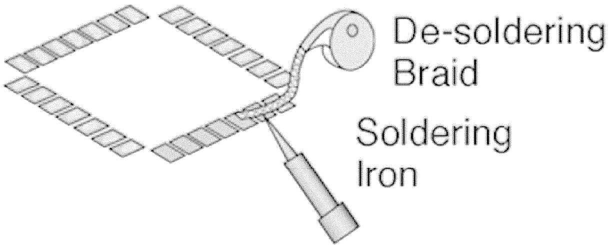
1. Remove the solder from all of the pins of a Flat IC by using a desolder braid



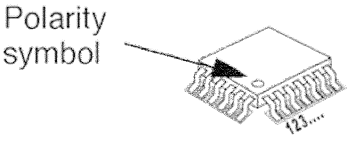
2. Put the iron wire under the pins of the Flat IC and pull it in the direction indicated while heating the pins using a soldering iron. A small awl can be used instead of the iron wire.

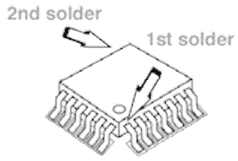

Soldering
Iron

3. Remove the solder from all the pads of the Flat IC by using a de solder braid

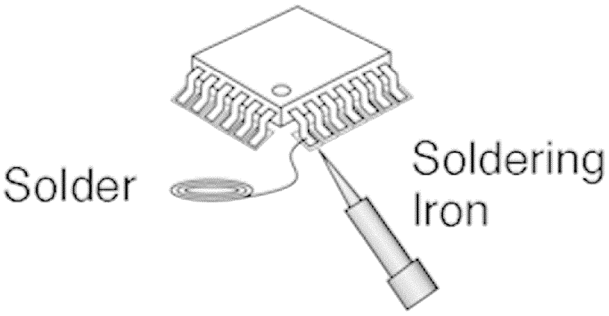

De-soldering
Braid
Soldering
Iron

4. Position the new Flat IC in place (apply the pins of the Flat IC to the soldering pads where the pins need to be soldered). Properly determine the positions of the soldering pads and pins by correctly aligning the polarity symbol

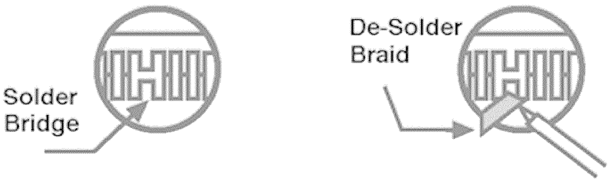

Polarity
symbol
123....


2nd solder
1st solder

5. Solder all pins to the soldering pads using a fine tipped soldering iron



6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de solder braid as shown in the figure below



IMPORTANT

**To protect against possible damage to the solid state devices due to arcing or static discharge, make certain that all ground wires are securely connected**

CAUTION

**The power supply circuit is above earth ground and the chassis cannot be polarized. Use an isolation transformer when servicing the receiver to avoid damage to the test equipment or to the chassis. Connect the test equipment to the proper ground(HOT or COLD) when servicing, or incorrect voltages will be measured.**

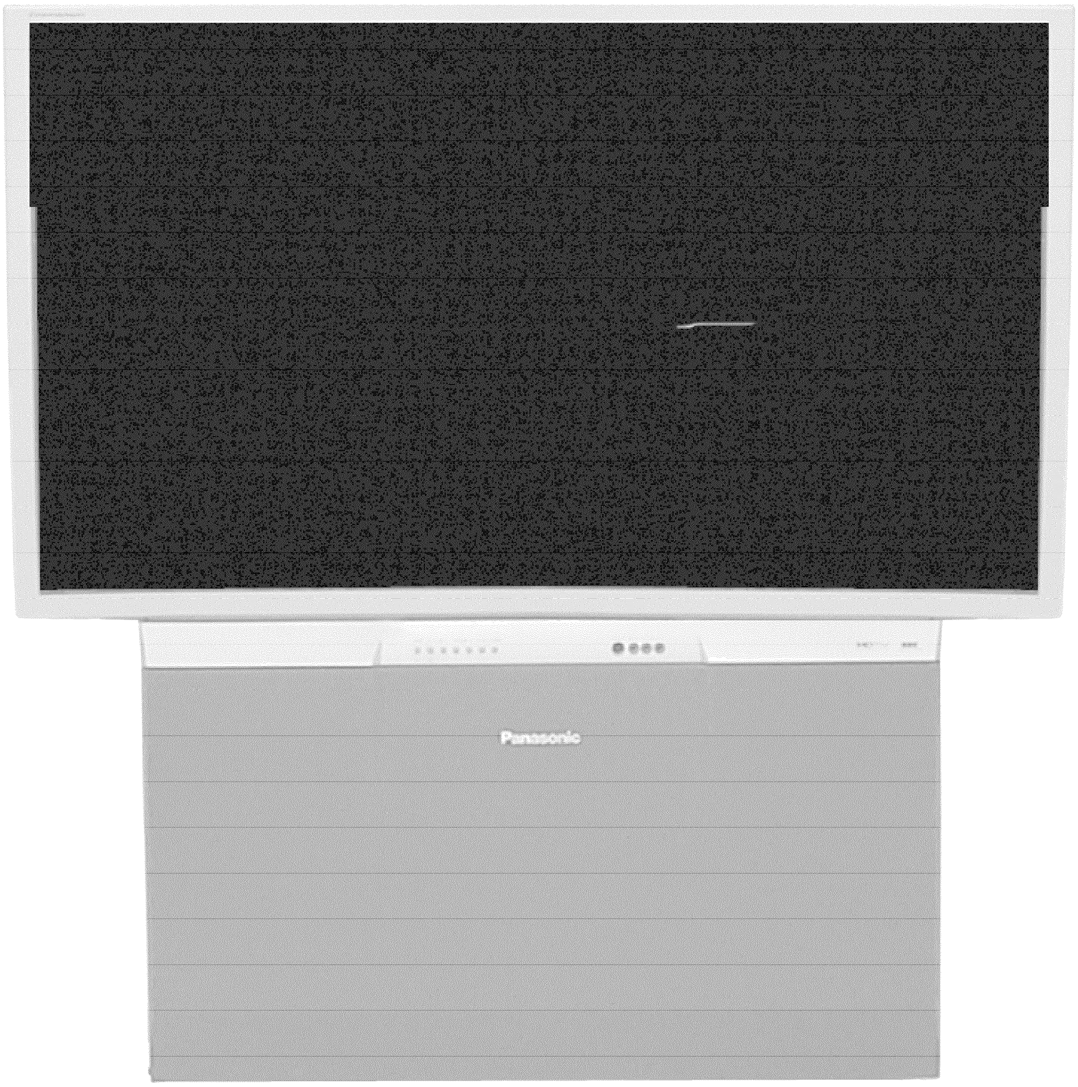
WARNING

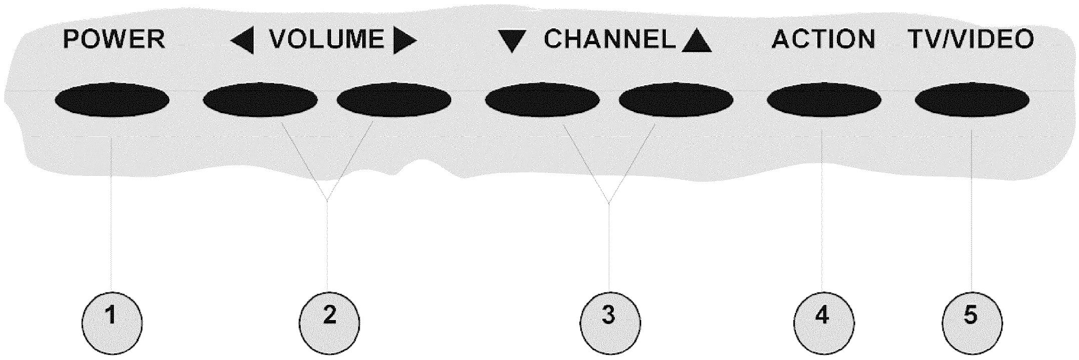
**This receiver has been designed to meet or exceed applicable safety and x ray radiation protection as specified by government agencies and independent testing laboratories.**

**To maintain original product safety design standards relative to x ray radiation and shock and fire hazard, parts indicated with the symbol ⚠ on the schematic must be replaced with identical parts. Order parts from the manufacturer'sparts center using the parts numbers shown in this service manual, or provide the chassis number and the part reference number.**

**For optimum performance and reliability, all other parts should be replaced with components of identical specification.**

# 5. PTV Location of controls




POWER
◀ VOLUME ▶
▼ CHANNEL ▲
ACTION
TV/VIDEO
1
2
3
4
5

**Quick reference control operation**

① **Power** - Press to turn ON or OFF.

② **Volume** - Press to adjust sound level, or to adjust audio menus, video menus, and select operating features when menus are displayed

③ **Channel** - Press to select programmed channels. Press to highlight desired features when menus are displayed. Also use to select cable converter box channels after programming remote control infra-red codes (the TV/AUX/CABLE switch must be set in CABLE position).

④ **Action** - Press to display main menu and access on screen feature and adjustment menus.

⑤ **TV/Video** - Press to select TV or one of the video inputs, for the main picture or the PIP frame (when PIP frame is displayed).

# 6. Receiver feature table

| FEATURE/MODEL | PT-53WX53G / PT-53WX53G/PT-47WX53G / PT-47WX53G |
|---|---|
| CHASSIS | AP825 |
| MICRO | 256K |
| MENU LANGUAGE | ENG/SPAN/FR |
| CLOSE CAPTION | X |
| V-CHIP (USA/CANADA | X |
| CHANNEL INFO BANNER | X |
| VIDEO INPUT SKIP | SKIP |
| CHANNEL COUNT | 181 |
| PIP (1T), 2T PIP (2T), 2T SPLIT | 2T SPLIT |
| 2RF | X |
| REMOTE CONTROL (W/LIGHT) | EUR7603Z90 |
| CRT SUPPLIER | MDDA (CENTAUR) |
| SCREEN | W/PROT SCREEN |
| CHASSIS | P8W |
| COMB FILTER | MOTION ADP, 3D Y/C |
| HEC/VEC (X=BOTH) | X |
| NEW YNR | X |
| VM | X (DIGITAL) |
| V/A NORM (X=BOTH) | X |
| COLOR TEMP | X |
| AIP | X |
| PRESET/INPUT LABELING | X |
| VIDEO PICTURE MEMORY | X |
| DIGITAL SCAN RATE | 1080i, 480p |
| NTSC LINE DOUBLER | 480p PROGRESSIVE (NEW) |
| MTS/SAP/DBX | X |
| BUILT-IN AUDIO POWER | 15Wx2 (10%) |
| No. OF SPEAKERS | 4 |

| FEATURE/MODEL | PT-53WX53G / PT-53WX53G/PT-47WX53G / PT-47WX53G |
|---|---|
| BASS/BALANCE/TREBLE CONTROL | X |
| AI SOUND | X |
| SURROUND | X |
| SPATIALIZER/BBE | BBE |
| A/V IN (REAR/FRONT) | 4(3/1) |
| A/V PROGRAM OUT | X |
| AUDIO OUT (FAO: F, VAO:V) | F, V |
| COMPONENT INPUT (Y, Pb, Pr) | 2 |
| S-VHS INPUT (REAR/FRONT) | 2/1 |
| HDMI/HDCP INPUT | DVI/HDCP |

**Note:**
**Specifications are subject to change without notice or obligation.**

| FEATURE/MODEL | PT-47WX33G | PT-47WXC43G |
|---|---|---|
| CHASSIS | AP825 | AP825 |
| MICRO | 256K | 256K |
| MENU LANGUAGE | ENG/SPAN/FR | ENG/SPAN/FR |
| CLOSE CAPTION | X | X |
| V-CHIP (USA/CANADA | X | X |
| CHANNEL INFO BANNER | X | X |
| VIDEO INPUT SKIP | SKIP | SKIP |
| CHANNEL COUNT | 181 | 181 |
| PIP (1T), 2T PIP (2T), 2T SPLIT | 2T SPLIT | 2T SPLIT |
| 2RF | X | X |
| REMOTE CONTROL (W/LIGHT) | EUR7613Z40 | EUR7613Z40 |
| CRT SUPPLIER | MDDA (CENTAUR) | MDDA (CENTAUR) |
| SCREEN | NO PROT SCREEN | PROT SCREEN PACKED SEPARATELY |
| CHASSIS | P8W | P8W |
| COMB FILTER | MOTION ADP, 3D Y/C | MOTION ADP, 3D Y/C |
| HEC/VEC (X=BOTH) | X | X |
| NEW YNR | X | X |
| VM | X (DIGITAL) | X (DIGITAL) |
| V/A NORM (X=BOTH) | X | X |
| COLOR TEMP | X | X |
| AIP | X | X |
| PRESET/INPUT LABELING | X | X |
| VIDEO PICTURE MEMORY | X | X |
| DIGITAL SCAN RATE | 1080i, 480p | 1080i, 480p |
| NTSC LINE DOUBLER | 480p PROGRESSIVE (NEW) | 480p PROGRESSIVE (NEW) |
| MTS/SAP/DBX | X | X |
| BUILT-IN AUDIO POWER | 10Wx2 (10%) | 10Wx2 (10%) |
| No. OF SPEAKERS | 2 | 2 |

| FEATURE/MODEL | PT-47WX33G | PT-47WXC43G |
|---|---|---|
| BASS/BALANCE/TREBLE CONTROL | X | X |
| AI SOUND | X | X |
| SURROUND | X | X |
| SPATIALIZER/BBE | BBE | BBE |
| A/V IN (REAR/FRONT) | 4(3/1) | 4(3/1) |
| A/V PROGRAM OUT | X | X |
| AUDIO OUT (FAO: F, VAO:V) | F, V | F, V |
| COMPONENT INPUT (Y, Pb, Pr) | 2 | 2 |
| S-VHS INPUT (REAR/FRONT) | 2/1 | 2/1 |
| HDMI/HDCP INPUT | DVI/HDCP | DVI/HDCP |

**Note:**
**Specifications are subject to change without notice or obligation.**

| FEATURE/MODEL | PT-4743G |
|---|---|
| CHASSIS | AP825 |
| MICRO | 256K |
| MENU LANGUAGE | ENG/SPAN/FR |
| CLOSE CAPTION | X |
| V-CHIP (USA/CANADA | X |
| CHANNEL INFO BANNER | X |
| VIDEO INPUT SKIP | SKIP |
| CHANNEL COUNT | 181 |
| PIP (1T), 2T PIP (2T), 2T SPLIT | 2T SPLIT |
| 2RF | X |
| REMOTE CONTROL (W/LIGHT) | EUR7603Z90 |
| CRT SUPPLIER | MDDA (CENTAUR) |
| SCREEN | PROT SCREEN PACKED SEPARATELY |
| CHASSIS | P8W |
| COMB FILTER | MOTION ADP, 3D Y/C |
| HEC/VEC (X=BOTH) | X |
| NEW YNR | X |
| VM | X (DIGITAL) |
| V/A NORM (X=BOTH) | X |
| COLOR TEMP | X |
| AIP | X |
| PRESET/INPUT LABELING | X |
| VIDEO PICTURE MEMORY | X |
| DIGITAL SCAN RATE | 1080i, 480p |
| NTSC LINE DOUBLER | 480p PROGRESSIVE (NEW) |
| MTS/SAP/DBX | X |
| BUILT-IN AUDIO POWER | 15Wx2 (10%) |
| No. OF SPEAKERS | 2 |
| BASS/BALANCE/TREBLE CONTROL | X |
| **FEATURE/MODEL** | **PT-4743G** |
| AI SOUND | X |
| SURROUND | X |
| SPATIALIZER/BBE | BBE |
| A/V IN (REAR/FRONT) | 4(3/1) |
| A/V PROGRAM OUT | X |
| AUDIO OUT (FAO: F, VAO:V) | F, V |
| COMPONENT INPUT (Y, Pb, Pr) | 2 |
| S-VHS INPUT (REAR/FRONT) | 2/1 |
| HDMI/HDCP INPUT | DVI/HDCP |

**Note:**
**Specifications are subject to change without notice or obligation.**

# 7. Board description table

| BOARD | PART NUMBER | DESCRIPTION |
|---|---|---|
| A-BOARD | TNP2AH045 | MAIN CHASSIS |
| D-BOARD | TNP2AH046 | POWER SUPPLY |
| * DC-BOARD | TNPAA120 | CONVERGENCE CIRCUIT |
| * DV-BOARD | TNP2AA114 | DVI BOARD |
| * DG-BOARD | TNP2AA126 | PIP PROCESSING, SPLIT, SEARCH, FORMATS |
| LB-BOARD | TNP2AA147 | BLUE PRT |
| LR-BOARD | TNP2AA145 | RED PRT |
| LG-BOARD | TNP2AA146 | GREEN PRT |
| K-BOARD | TNP2AA089AA | FRONT KEY BOARD |
| G-BOARD | TNP2AA090AA | FRONT A/V BOARD |
| R-BOARD | TNPA0615AB | IR BOARD |

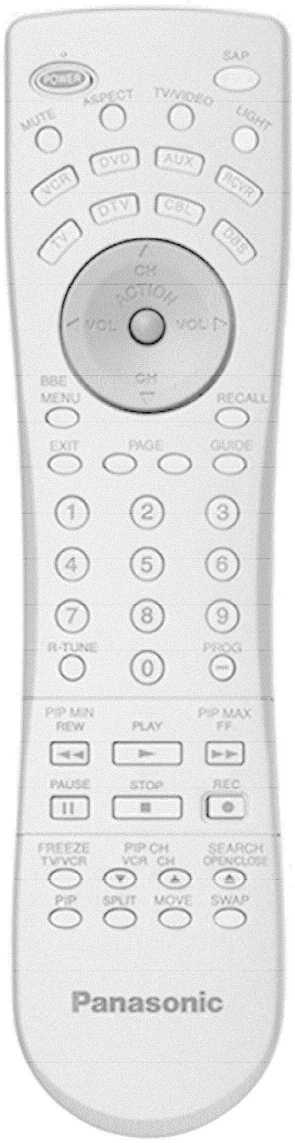
**NOTE**
**When ordering a replacement board assembly, append an “S” to the board number**

**EXAMPLE**
**To order the A Board, the replacement board is TNP2AH045S**

*

**The DC-Board, DG-Board and DV-Board are non-serviceable boards, except for DV-Board audio connector and DVI connector. If any of these boards or DV-Board components are defective, replace it with a new one.**

# 8. Location of controls (EUR7603Z90 remote)


POWER
SAP
ASPECT
TV/VIDEO
MUTE
LIGHT
DVD
AUX
VCR
RCVR
DTV
CBL
TV
DBS
CH
ACTION
VOL
BBE
MENU
RECALL
EXIT
PAGE
GUIDE
1
2
3
4
5
6
7
8
9
R-TUNE
0
PROG
PIP MIN
REW
PLAY
PIP MAX
FF
PAUSE
STOP
REC
FREEZE
TV/VCR
PIP CH
VCR CH
SEARCH
OPEN/CLOSE
PIP
SPLIT
MOVE
SWAP
Panasonic

**POWER**
Press to turn ON and OFF

**MUTE**
Press to mute sound

**TV - VCR - DBS/CBL - DVD**
Press to select remote operation.

**VOLUME**
Press to adjust TV sound and navigate in menus.

**MENU**
Press to acces DTV, DBS, or DVD menus.

**EXIT**
DBS functions button.

**NUMERIC PAD**
Press to select any channel

**R-TUNE**
Press to switch to previously viewed channel or video mode.

**COMPONENT**
Component function buttons.

**SAP**
Access second audio program.

**TV/VIDEO**
Press to select TV, Video mode

**LIGHT**
Press to illuminate buttons

**CHANNEL**
Press to select next or previous channel and navigate in menus.

**RECALL**
Press to display time, channel, sleep timer and other options.

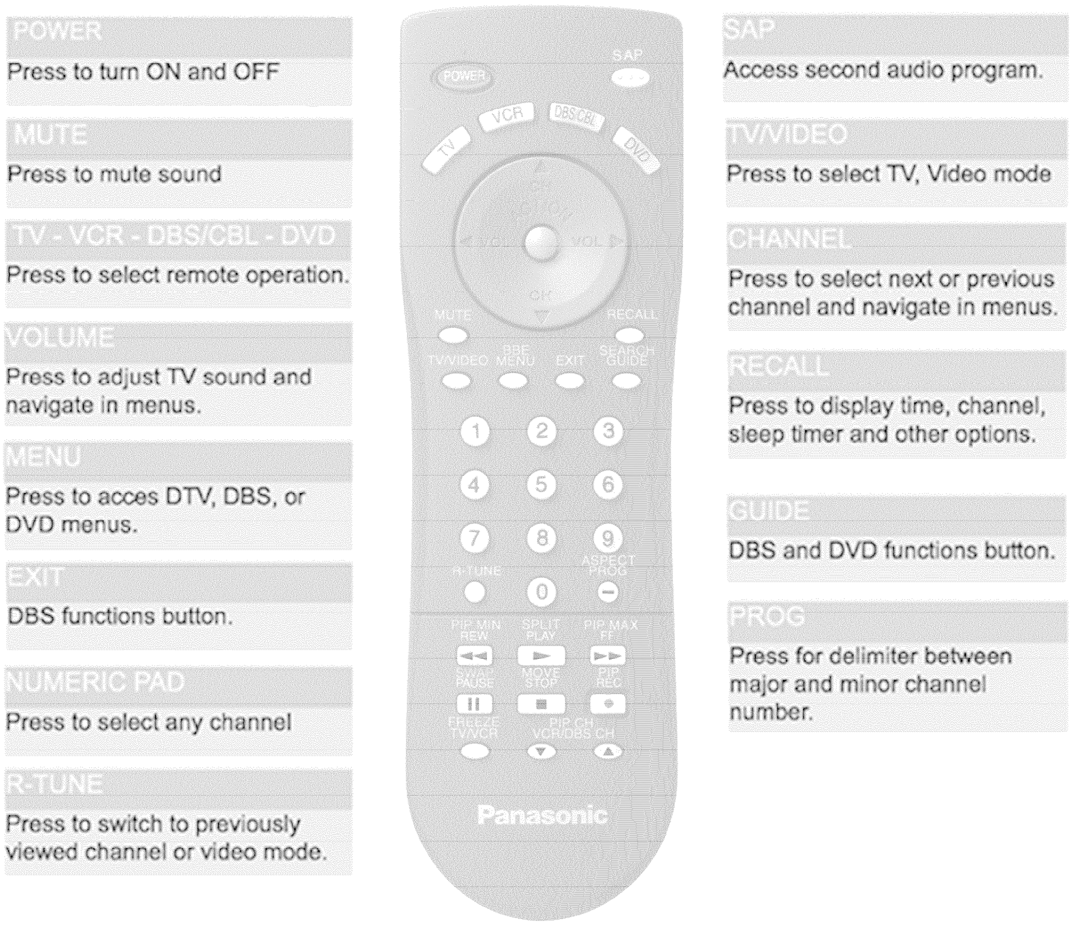
**GUIDE**
DBS and DVD functions button.

**PROG**
Press for delimiter between major and minor channel number.

**PIP SPLIT MOVE SWAP FREEZE PIPCH SEARCH**
PIP FUNCTION BUTTONS

**Note:**
**For additional information for this remote please refer to the owner’s manual section remote operation, listed on the parts list section.**

# 9. Location of controls (EUR7613Z40 remote)


POWER
SAP
TV
VCR
DBS/CBL
DVD
CH
VOL
VOL
CH
MUTE
RECALL
TV/VIDEO
BBE MENU
EXIT
SEARCH GUIDE
1
2
3
4
5
6
7
8
9
R-TUNE
0
ASPECT PROG
PIP MIN REW
SPLIT PLAY
PIP MAX FF
SWAP PAUSE
MOVE STOP
PIP REC
FREEZE TV/VCR
PIP CH VCR/DBS CH
Panasonic

**POWER**
Press to turn ON and OFF

**MUTE**
Press to mute sound

**TV - VCR - DBS/CBL - DVD**
Press to select remote operation.

**VOLUME**
Press to adjust TV sound and navigate in menus.

**MENU**
Press to acces DTV, DBS, or DVD menus.

**EXIT**
DBS functions button.

**NUMERIC PAD**
Press to select any channel

**R-TUNE**
Press to switch to previously viewed channel or video mode.

**SAP**
Access second audio program.

**TV/VIDEO**
Press to select TV, Video mode

**CHANNEL**
Press to select next or previous channel and navigate in menus.

**RECALL**
Press to display time, channel, sleep timer and other options.

**GUIDE**
DBS and DVD functions button.

**PROG**
Press for delimiter between major and minor channel number.

**Note:**
**For additional information for this remote please refer to the owner's manual section remote operation, listed on the parts list section.**

# 10. Auto diagnosis feature

**This receiver incorporates a new self diagnosis feature. With this new feature will be easier for the technician to detect the failures. There is a LED located by the keyboard on the front panel, this LED will start flashing when SOS is detectedby the circuits located in specific areas, depending on how many times the LED is flashing, this will tell you what circuit should be checked. Make a count of flashing and see the table shown below. Please use this feature effectively especially forintermittent problems.**

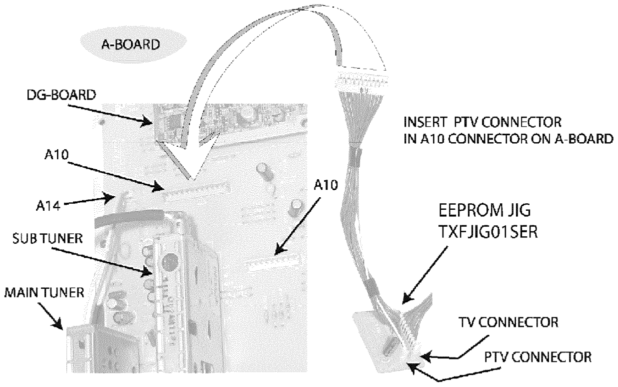
| NUMBER OF FLASHES | POSSIBLE CIRCUIT |
|---|---|
| 1 | +140 |
| 2 | LOW D.C. |
| 3 | CONVERGENCE |
| 4 | HHS |
| 5 | IC4511 |
| 6 | IC4518 |

# 11. EEPROM copy jig

**This PTV has a feature that allows to clone convergence and main EEPROM data adjustments from a PTV to other by connecting a jig to the PTV set. A jig part number TXFJIG01SER, is available through Matsushita/Panasonic Services.**

**Preparation:**
**To connect this jig, remove the lower back cover as instructed on disassembly for service section on this service manual and insert the jig into A10 connector located on the A-Board. (See figure)**

**EEPROM copy jig connection**


A-BOARD
DG-BOARD
A10
A14
SUB TUNER
MAIN TUNER
A10
INSERT PTV CONNECTOR
IN A10 CONNECTOR ON A-BOARD
EEPROM JIG
TXFJIG01SER
TV CONNECTOR
PTV CONNECTOR

**Procedure to copy data:**

1. **Enter to service mode and display service menu.**
2. **Select “AREA” DAC and then press ACTION button on remote to enter. Press VOL right/left to select one of the following options then press ACTION:**

    **- Select ALL to copy all main EEPROM data**
    **- Select ADJ to copy only adjustment data.**
    **- Select FIX to copy only fix data**

3. **To copy data from main EEPROM to jig, select “IN → EX” DAC and press ACTION button on remote.**
4. **To copy data from jig to main EEPROM, select “EX → IN” DAC and press ACTION button on remote.**

**Procedure to copy convergence:**

1. **Enter to service mode and display service menu**
2. **Select “FINE” DAC and press ACTION on remote.**
3. **Press “8” on remote.**
4. **Select from and then press ACTION on remote:**

    **- INT to copy data from internal EEPROM to jig**

- EXT to copy from jig to internal EEPROM.

5. Then select from and press ACTION on remote:

   - 480i_p format
   - 1080i format
   - Z480i format (480i ZOOM mode)
   - NOT USE to back up data
   - ALL to copy all convergence data from internal EEPROM
   - D480i (default factory preset)
   - D1080i (default factory preset)

   **NOTE:**
   **The stated as default factory preset contain the factory DATA; Use these when data was lost or is hard to adjust.**

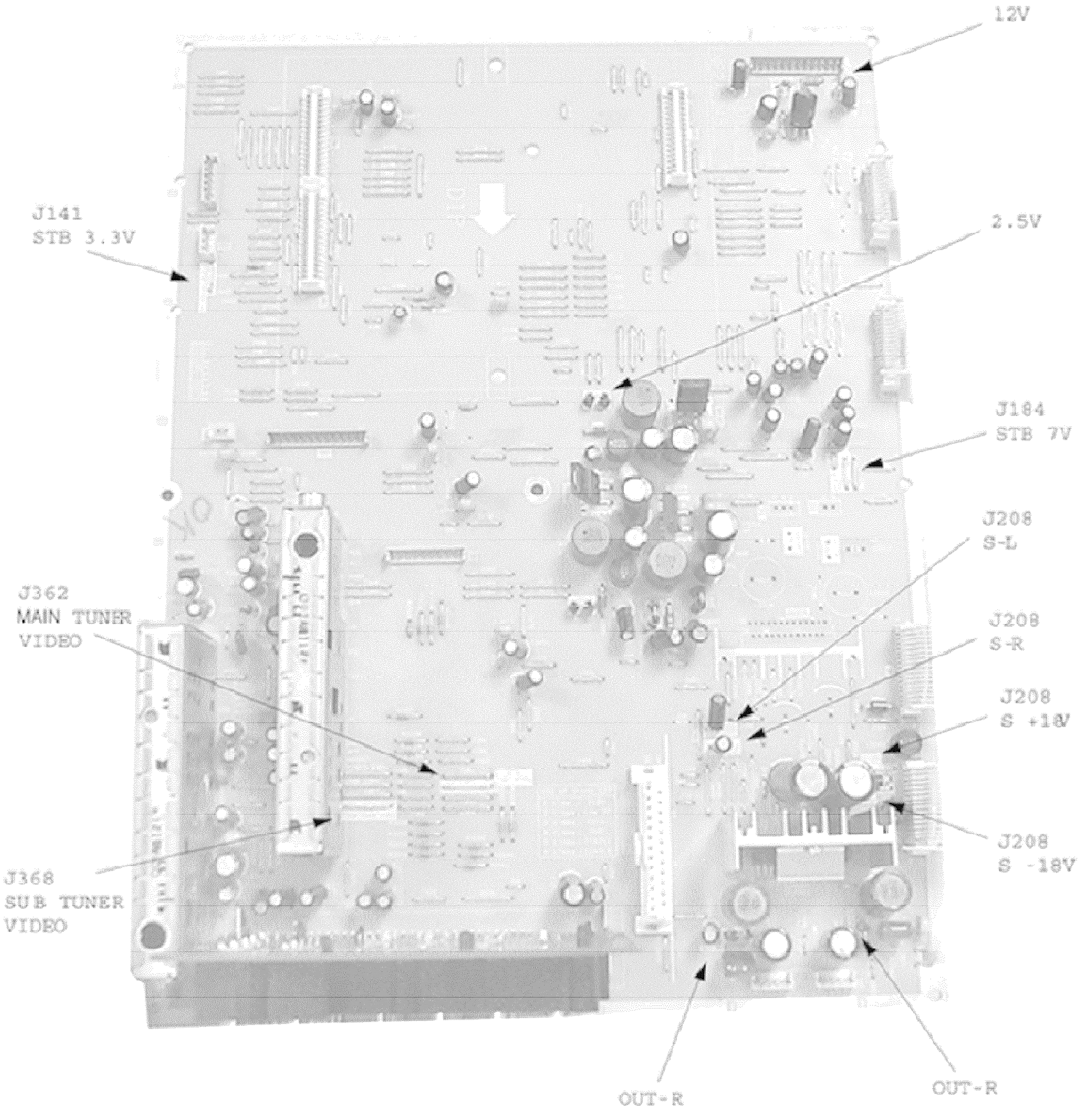
6. Select from and then press ACTION on remote:

   - INT to copy data to internal EEPROM
   - EXT to copy data to jig.

7. Then select which data format you want to copy to.
8. When completed, exit the service mode.

# 12. A-Board check points

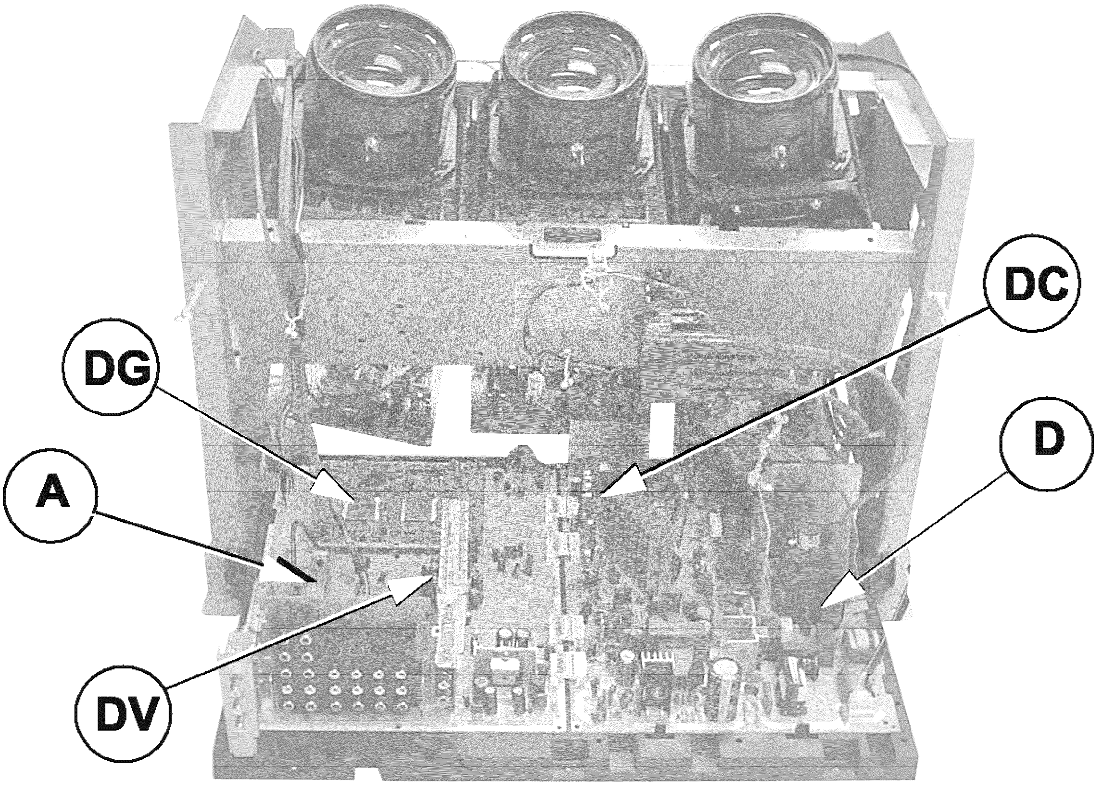
A-Board check points


12V
J141
STB 3.3V
2.5V
J184
STB 7V
J208
S-L
J362
MAIN TUNER
VIDEO
J208
S-R
J208
S +18V
J208
S -18V
J368
SUB TUNER
VIDEO
OUT-R
OUT-R

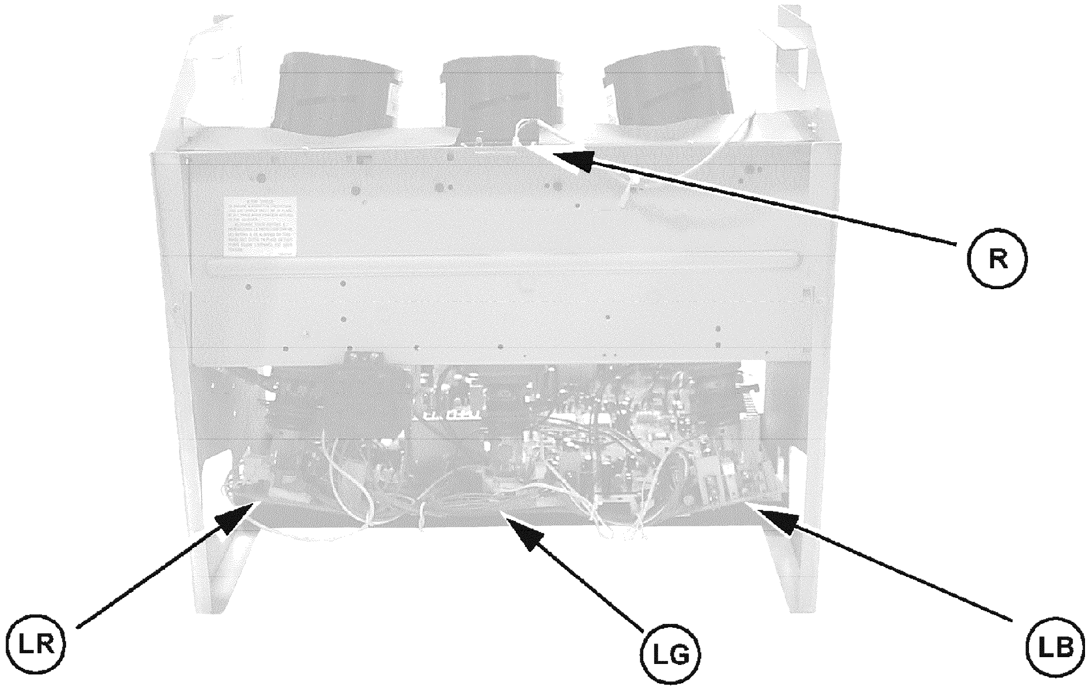
**NOTE:**
**All the measurements are in DC with a digital multimeter, color bar pattern, picture settings normalized and sound set to minimum.**

# 13. Chassis& boards layout (location of main components)

**Chassis and boards layout**

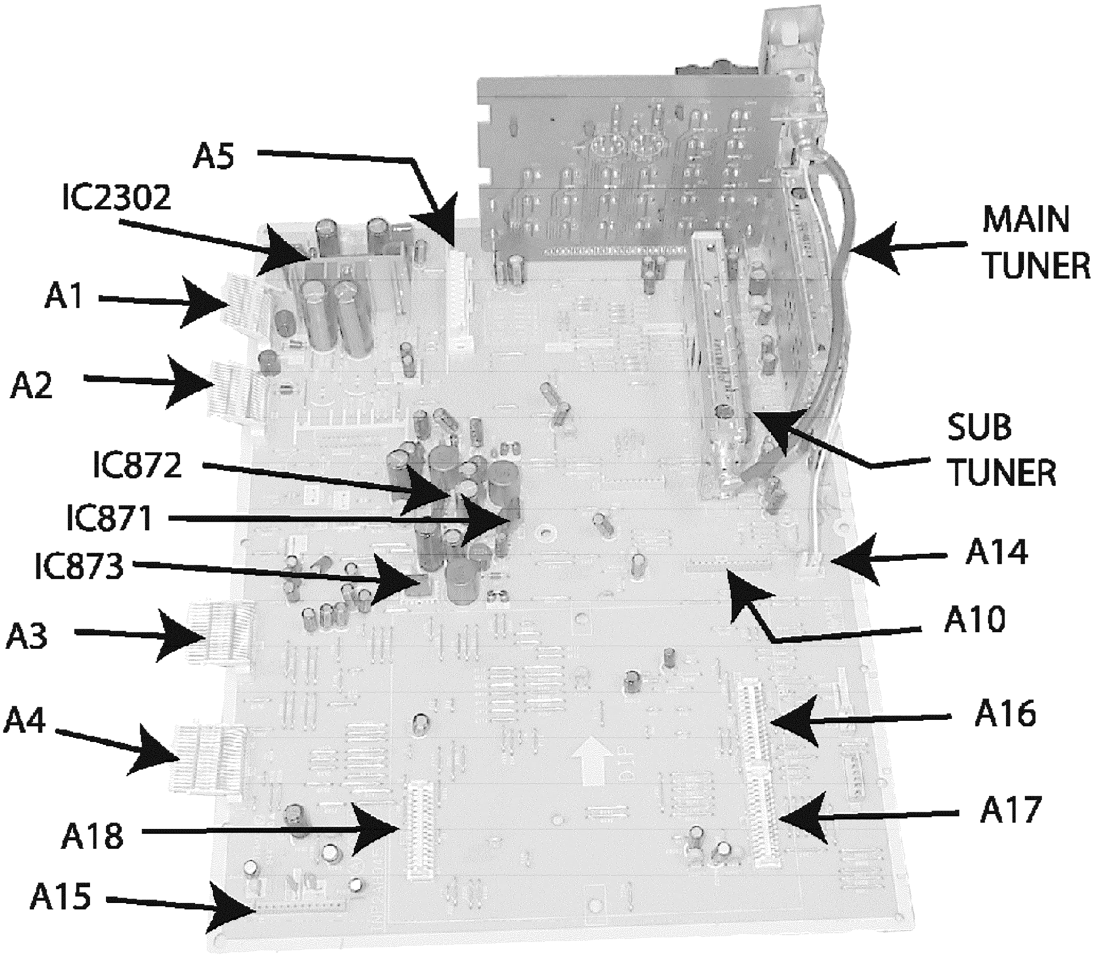


Back View

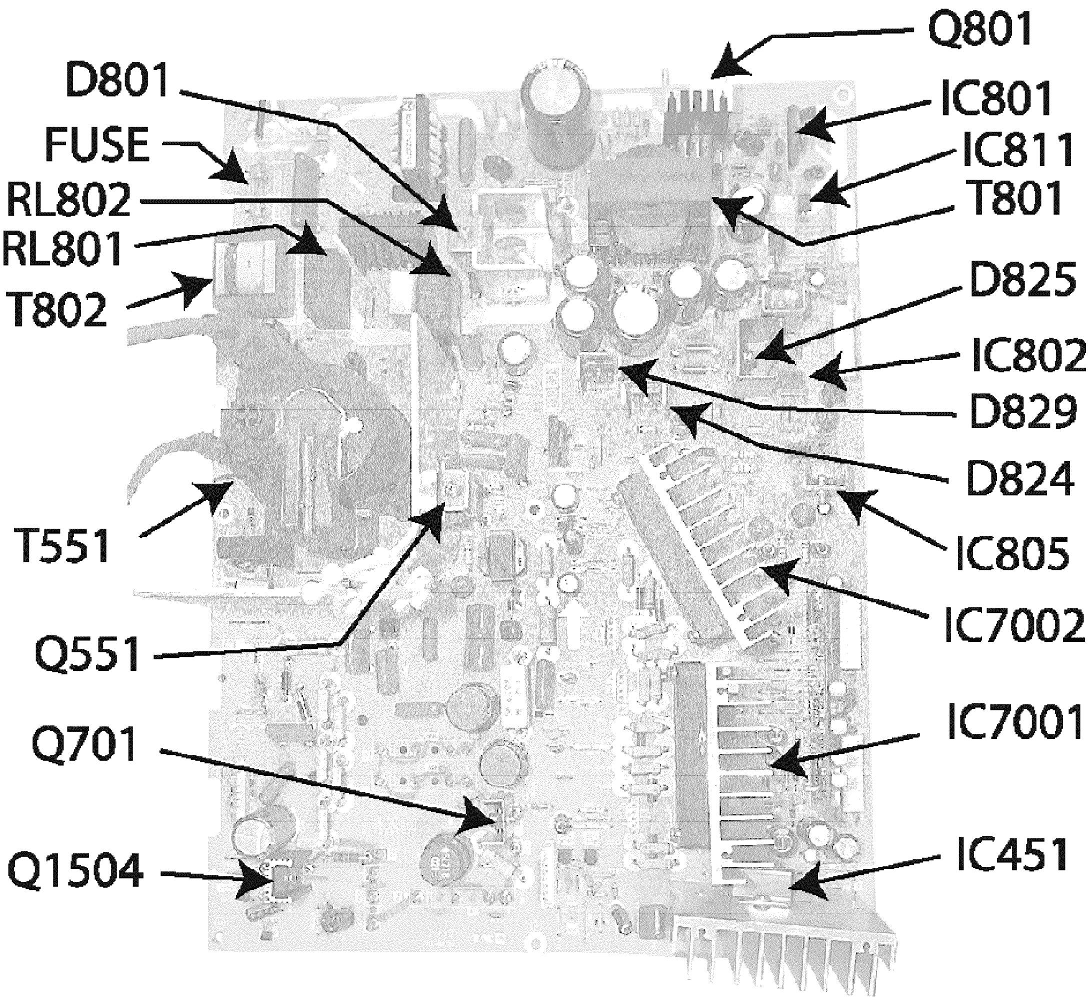


Front View

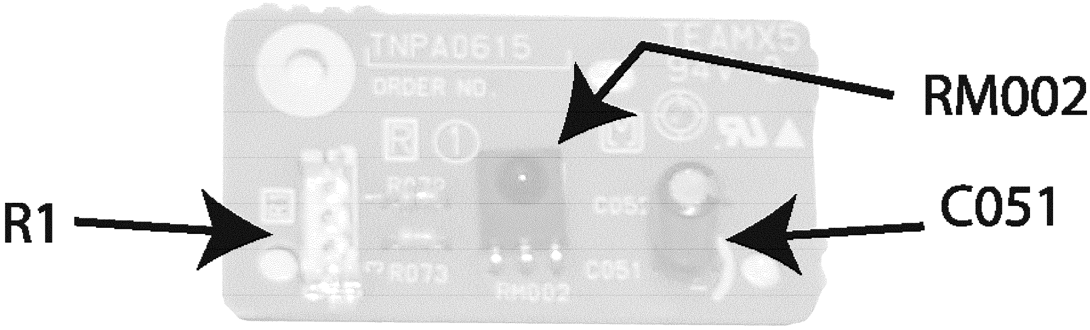
**A-BOARD**


A5
IC2302
A1
A2
IC872
IC871
IC873
A3
A4
A18
A15
MAIN TUNER
SUB TUNER
A14
A10
A16
A17

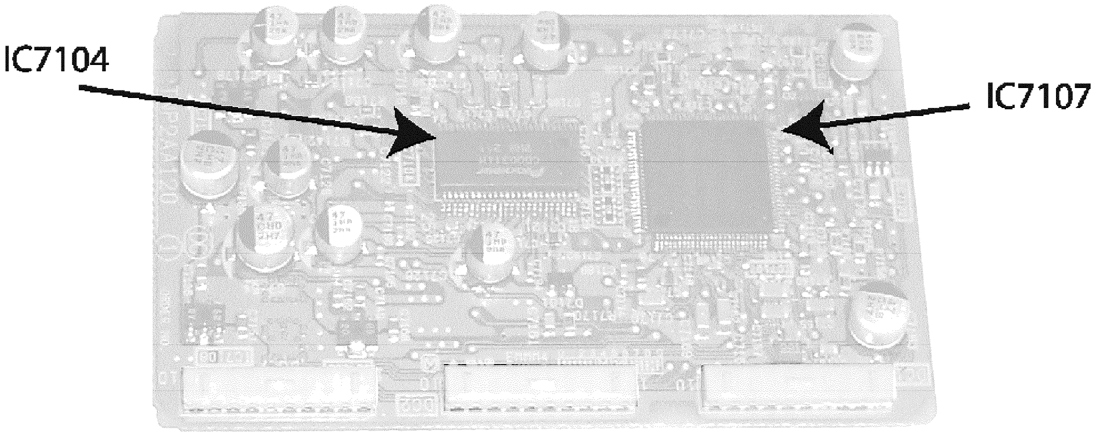
**D-BOARD**


Q801
D801
IC801
FUSE
IC811
RL802
T801
RL801
T802
D825
IC802
D829
D824
T551
IC805
IC7002
Q551
IC7001
Q701
Q1504
IC451

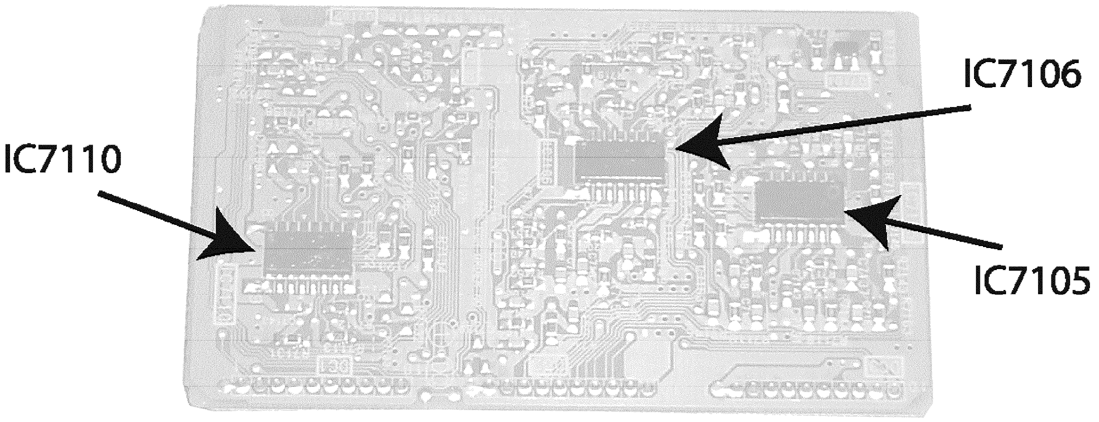
R-BOARD VIEW


TNPA0615
ORDER NO.
RM002
R1
C051

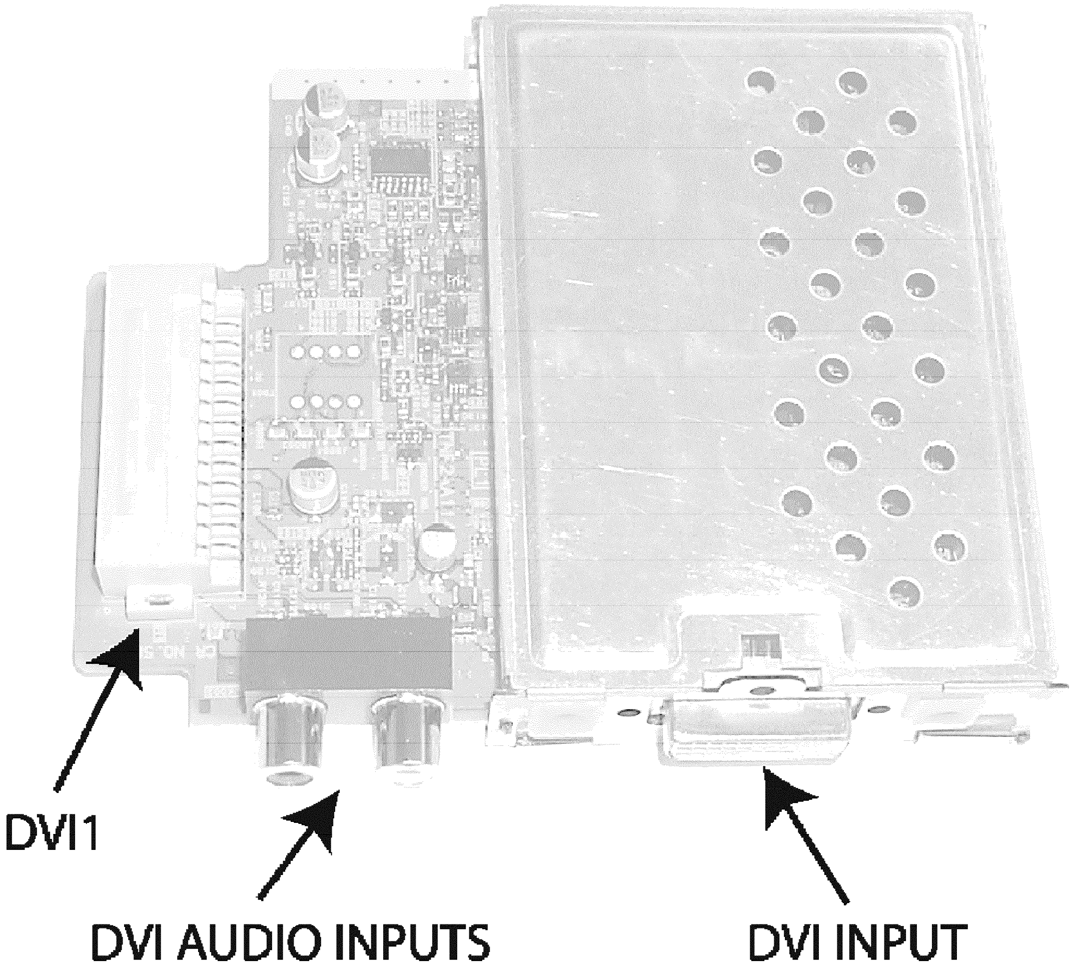
DC-BOARD TOP VIEW


IC7104
IC7107

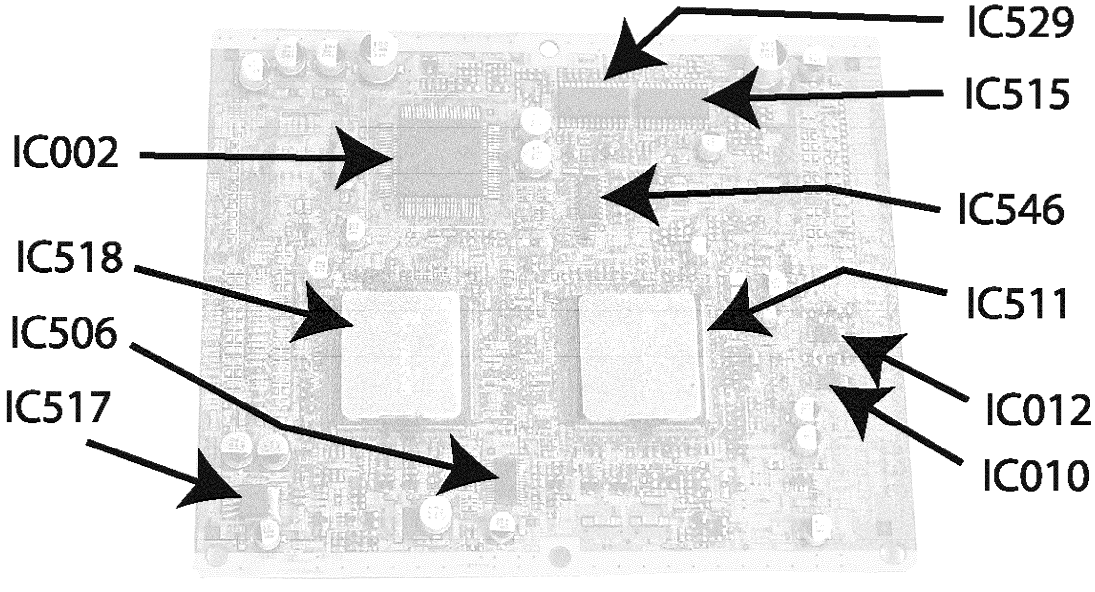
DC-BOARD BOTTOM VIEW


IC7106
IC7110
IC7105

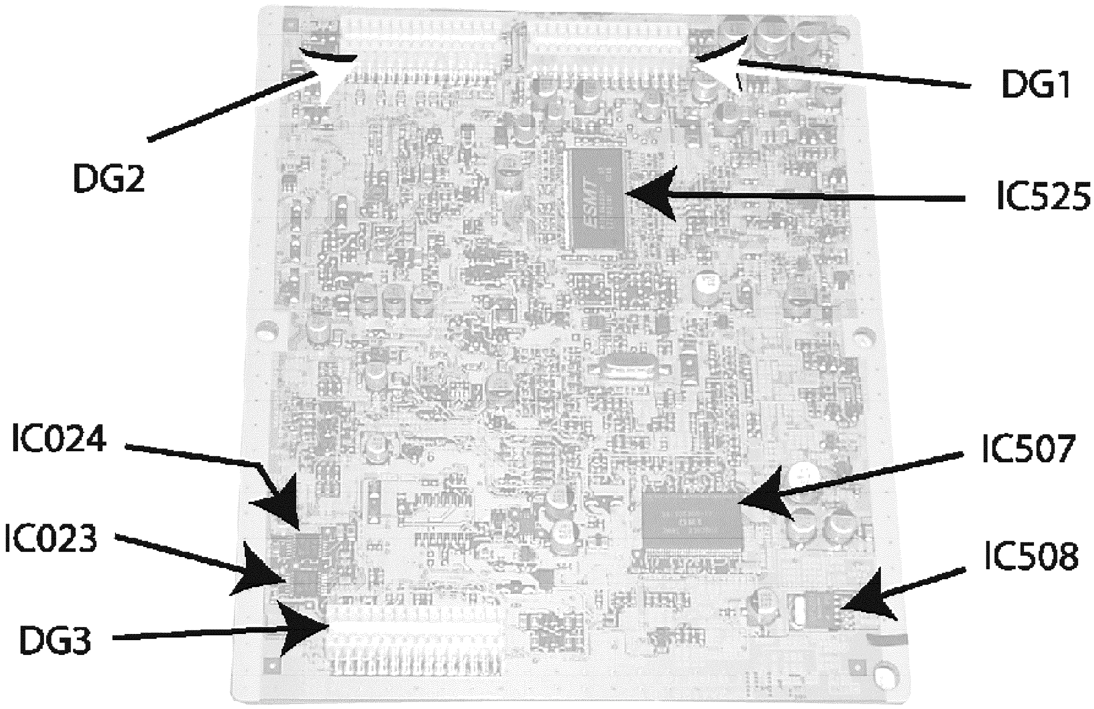
DV-BOARD


DVI1
DVI AUDIO INPUTS
DVI INPUT

DG-BOARD TOP VIEW


IC529
IC515
IC002
IC546
IC518
IC511
IC506
IC012
IC517
IC010

DG-BOARD BOTTOM VIEW

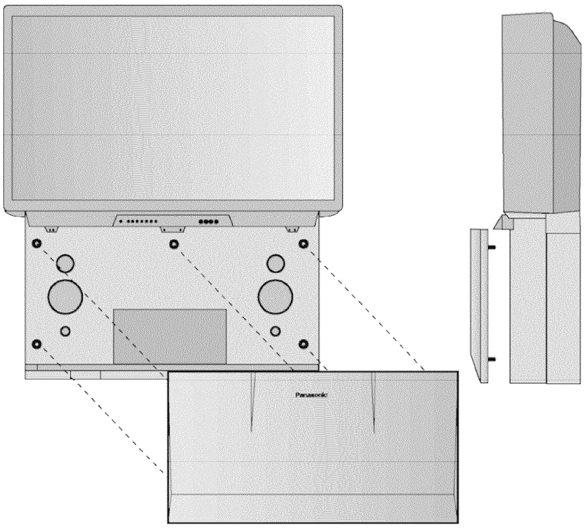


# 14. Disassembly for service

**NOTE:**
**Board ground wires may have to be disconnected to disassemble some boards. All ground wires must be reconnected using jumper leads, if necessary, before power is applied to PTV for service.**

**Speaker grille removal**
**Some models come with three pieces (sides for speakers and center cover); Speaker grille(s), it is secured to the cabinet of the PTV or on the sides. Grip panel(s) from the sides and middle upper part for one piece models, gently pull forward toremove. When reassembling, make certain to firmly press on the panel where the insertion points (5) are located, one at each corner and one at the middle top edge**

**Speaker grille removal (may vary)**



### Keyboard and front A/V inputs removal

1. Remove the speaker grille.
2. Unplug the connectors from the keyboard and front A/V inputs assemblies. Remove the screws from the control panel and tilt the front panel assembly upward and release it from the front cabinet. Then remove the screws affixing the keyboardand front A/V inputs to the control panel.

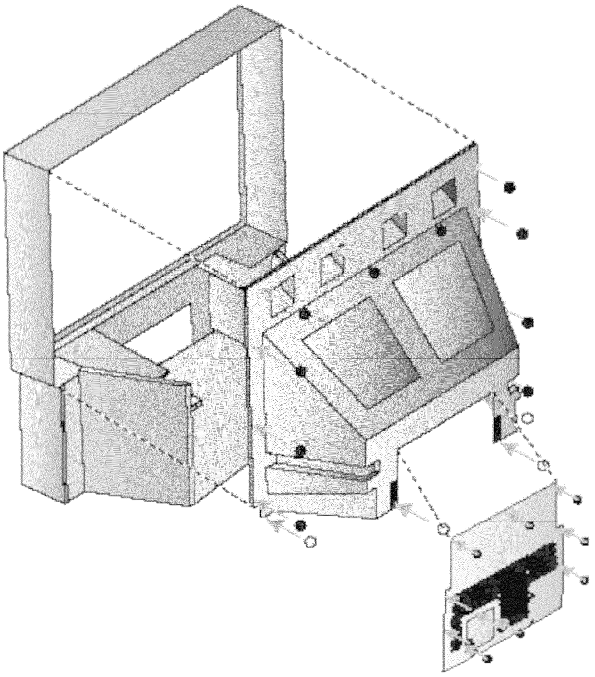
### Speakers replacement

1. Remove the speaker grille.
2. Each speaker is secured to the cabinet with (4) screws.
3. Disconnect the R and L speaker lead connectors from the speaker units.

### Back lower cover removal

1. Remove (7) hex screws around the perimeter, marked with arrows. See figure for screws location.
2. Remove (3) screws from around the A/V terminal board (marked with arrows).

Back lower cabinet removal



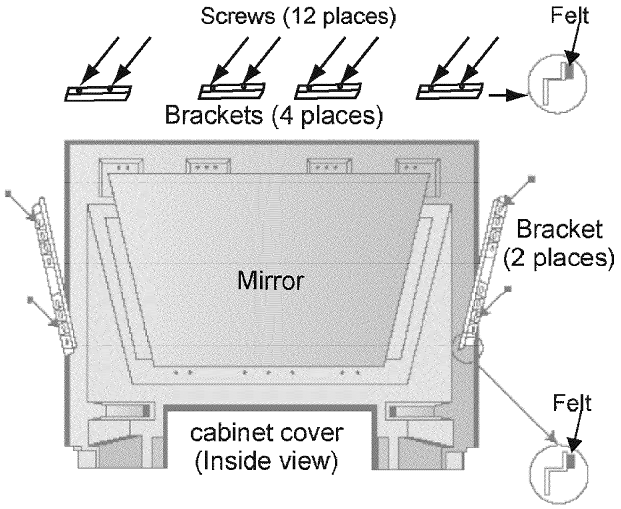
**Back cabinet removal**

1. **Remove the back lower cover. (Detailed previously).**
2. **The top back cover (plastic shell) is secured with (14) screws around its perimeter. See figure for screws location.**
3. **Be careful not to damage the mirror secured to the underside of the back cover.**

**Mirror removal**

**The mirror is attached inside the cabinet cover. Carefully remove the cabinet cover to access its interior surface and remove the screws securing the brackets that hold the mirror at the top and sides to the mirror.**

**Mirror removal**


Screws (12 places)
Felt
Brackets (4 places)
Bracket
(2 places)
Mirror
Felt
cabinet cover
(Inside view)

**Screen frame removal**

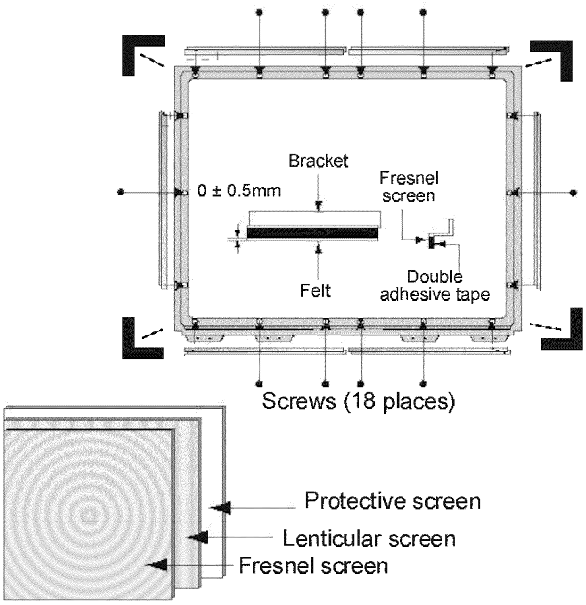
1. **Remove the speaker grille. Disconnect the cables leading to the keyboard and the AV panels and remove the keyboard and AV panel assembly. The assembly is secured by three (3) screws.**
2. **At this point the front cover is held only by four screws, be careful not to push the cabinet forward.**
3. **Remove screws and tilt the assembly forward while lifting it out of place.**

**Screen assembly**

1. **Remove the screen frame. See screen frame removal procedure above.**
2. **Place screen frame face down on a soft surface.**
3. **Remove all screen brackets and corner brackets**

**Note:**
**The brackets are painted black (permanent marker) on the edge to prevent reflection on image.**

**Screen assembly**


Bracket
Fresnel screen
0 ± 0.5mm
Felt
Double adhesive tape
Screws (18 places)
Protective screen
Lenticular screen
Fresnel screen

4. **Remove the horizontal barrier panel at the back of the cabinet.**
5. **Unplug connectors (K1, G1 and speaker connectors) and pull out the main chassis block.**

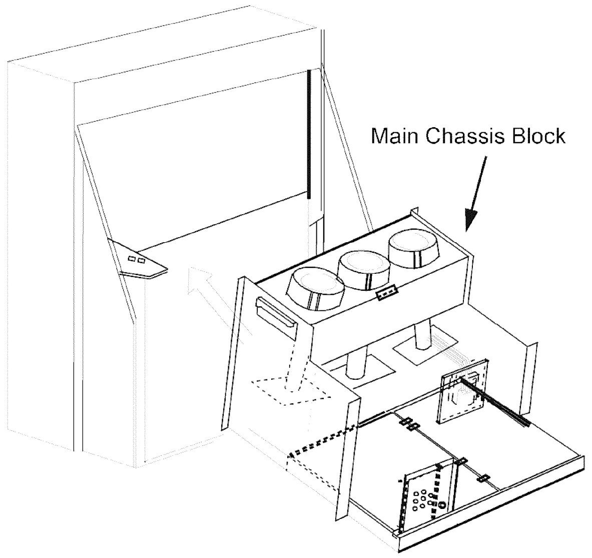
**Note:**

**Main chassis block can be serviced either in normal position or laying on its back (protect hookup terminal from damage).**

**Main chassis block**

1. **Remove the speaker grille.**
2. **Remove the back lower cabinet cover.**
3. **The main chassis block is secured to the cabinet by screws at front, behind the Speaker Grill and inside on the bottom of the optical frame).**
4. **Remove the horizontal barrier panel at the back of the cabinet.**
5. **Unplug connectors (K1, G1 and speaker connectors) and pull out the main chassis block.**

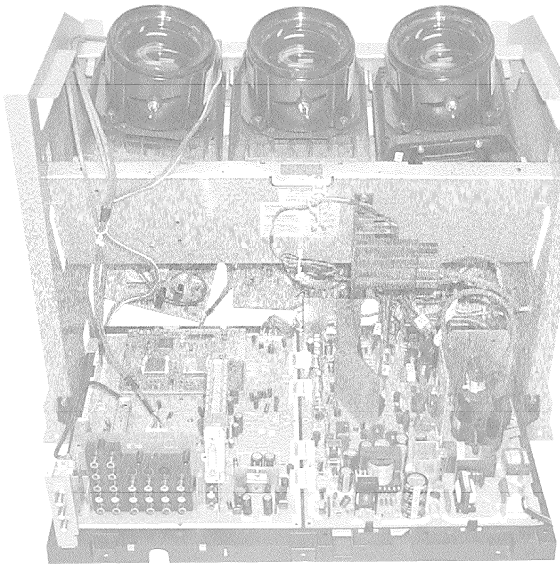
**Chassis removal**



## 14.1. Chassis assembly

**The chassis assembly shown in figure includes all the electrical and optical (light box) components**

**Chassis front view**



**A-Board**

1. **A-Board is secured to the chassis tray with five screws.**
2. **The A-Board is mated to the D-Board by four flexible connectors (male side of connectors): A1, A2, A3 & A4. To remove this board, unplug the connectors on the A-Board pulling from the sides of each connector.**

**NOTE:**

**Some tie wraps that secure the wire dressings may need to be unfastened for chassis removal.**

**D-Board**

1. **D-Board is secured to the chassis tray with five screws.**
2. **The D-Board is mated to the A-Board by four connectors (female side of connectors): D1, D2, D3 & D4. To remove this board, unplug the connectors on the A-Board pulling from the sides of each connector.**

**NOTE:**
**Some tie-wraps that secure the wire dressings may need to be unfastened for chassis removal.**

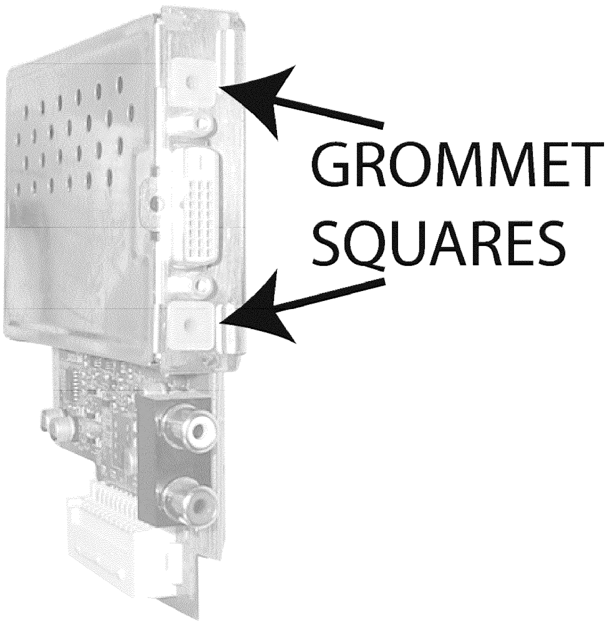
**DG-Board**

1. **Plugs onto the D-Board at the A16, A17 and A18 (DG1, DG2 and DG3 respectively) connectors.**

**NOTE:**
**This board is non-serviceable. / When removing this board pull carefully.**

**DV-Board**

1. **Plugs onto the A-Board at the A5 (DV1) connectors.**
2. **This board has two Grommet squares, be careful to do not screw too tight, otherwise this grommet screw hole will get stripped.**



**NOTE:**
**This board is non-serviceable. Except for JK002 (DVI AUDIO CONNECTOR) and JK002 (DVI CONNECTOR) / When removing this board pull carefully.**

**DC-Board**

1. **Plugs onto the D-Board at the D21, D22 and D23 (DC1, DC2 and DC3 respectively) connectors.**

**NOTE:**
**This board is non-serviceable. / When removing this board pull carefully.**

**R-Board**

1. **This board is secured to the upper front side of the light box by one screw, and plugged to R1 connector from A51 on A-Board**

**LR, LG and LB Board**

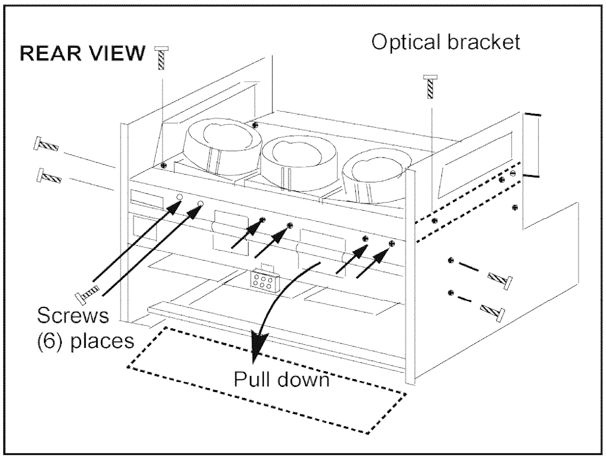
1. **Each board is plugged into the socket on the PRT neck, LR-Board on red PRT, LG-Board on green PRT and LB-Board on blue PRT.**

## 14.2. Disassembly for CRT replacement

**To facilitate CRT replacement, the complete CRT mounting chassis does not need to be removed.**

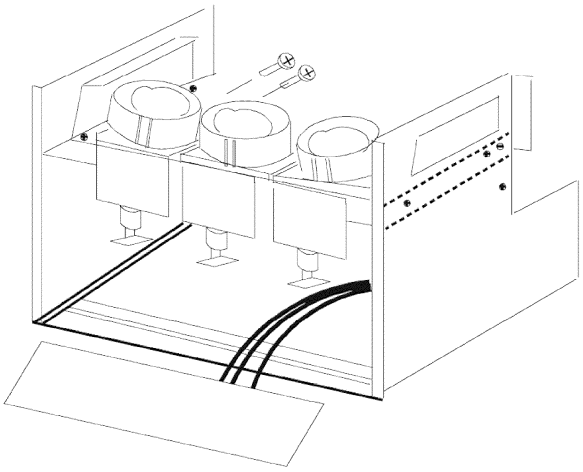
1. **Remove the main chassis block from the cabinet.**
2. **Remove the optical bracket metal cover (rear side) by removing (6) screws from back, (2) screws from top, and (2) screws from each side.**

**CRT replacement**

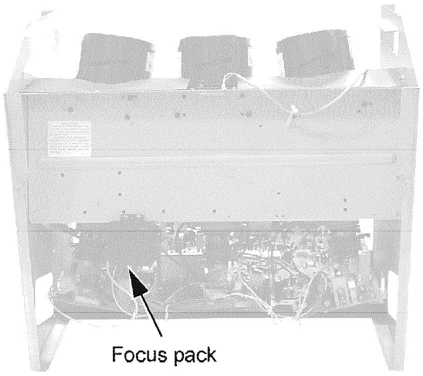


3. **Remove the defective CRT anode lead from the high voltage distributor block that is mounted on the flyback transformer. Discharge to CRT chassis.**
4. **Unplug connectors from the B-Board. See board layout. B9 for red, B10 for green, or B11 for blue**
5. **Unplug the defective CRT black DAG ground connector from the CRT Board.**
6. **Remove the CRT Board from the defective CRT neck.**
7. **Remove (2) screws from the defective CRT housing.**
   **Caution:**
   **Do not remove the (4) CRT lens screws and Support the CRT assembly when loosening screws.**

**CRT replacement**



Focus pack location



8. **Release CRT anode lead from CRT chassis wire clamp and all other wires from holders.**
9. **Loosen a screw that secures the DY and remove it from the CRT neck.**

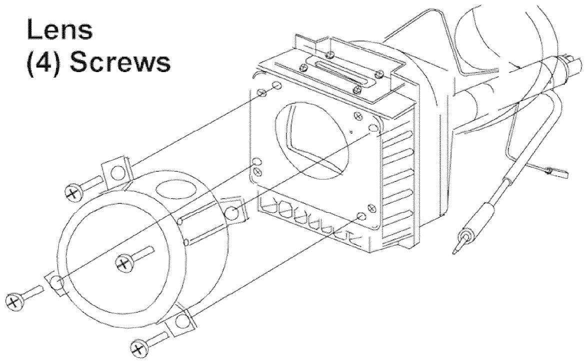
   **Caution:**

   **To insure protection against x ray radiation, the lens must be mounted in place at all times when power is applied to the PTV**

**CRT replacement**

1. **Remove CRT focus lens assembly (4 screws)**

**CRT assembly**

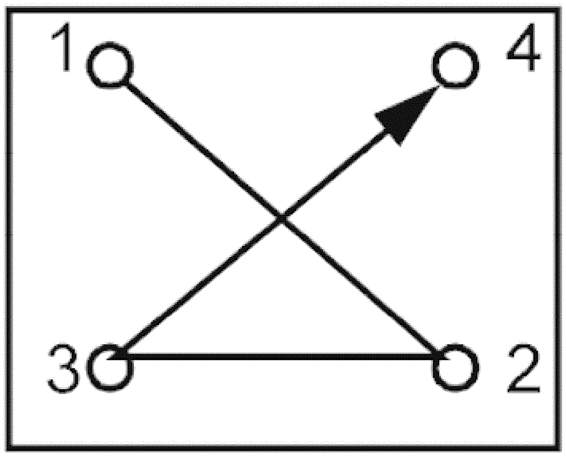


2. **Lay CRT face down on a soft cloth.**
3. **Note position of yoke with centering tabs and remove from defective CRT.**
4. **Remove CRT DAG ground from defective CRT. Mount it on the replacement CRT exactly as it was on the defective CRT.**

**Note:**
**Replacement CRT is supplied with H.V. anode lead attached.**

5. **Wire the anode lead wire.**
6. **Install yoke with other CRT neck assemblies on CRT neck in the same order and position as removed from the defective CRT.**
7. **Press yoke against bell of CRT and tighten the clamp just snug enough so it will not easily shift.**
8. **Assemble CRT focus lens assembly to new CRT with (4) screws. Make sure focus lens adjustment nut is in the same location as on other CRT focus lens**

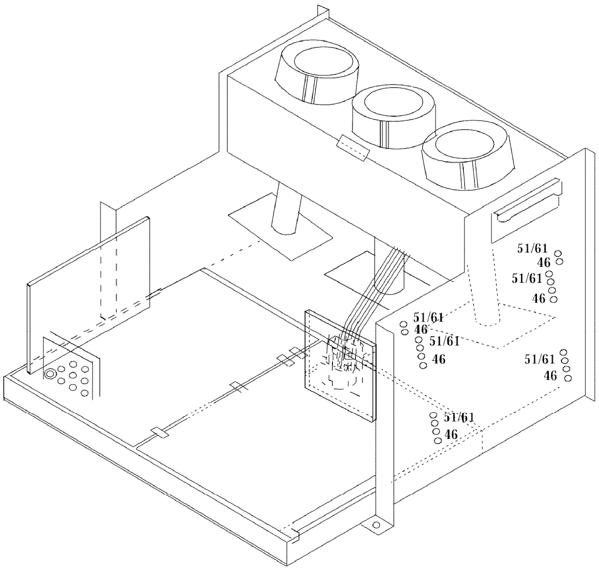
**CRT screw tightening order**



**Note:**
**Please assemble with screws in the order shown and tighten with the same torque.**

**Optical block position adjustment**

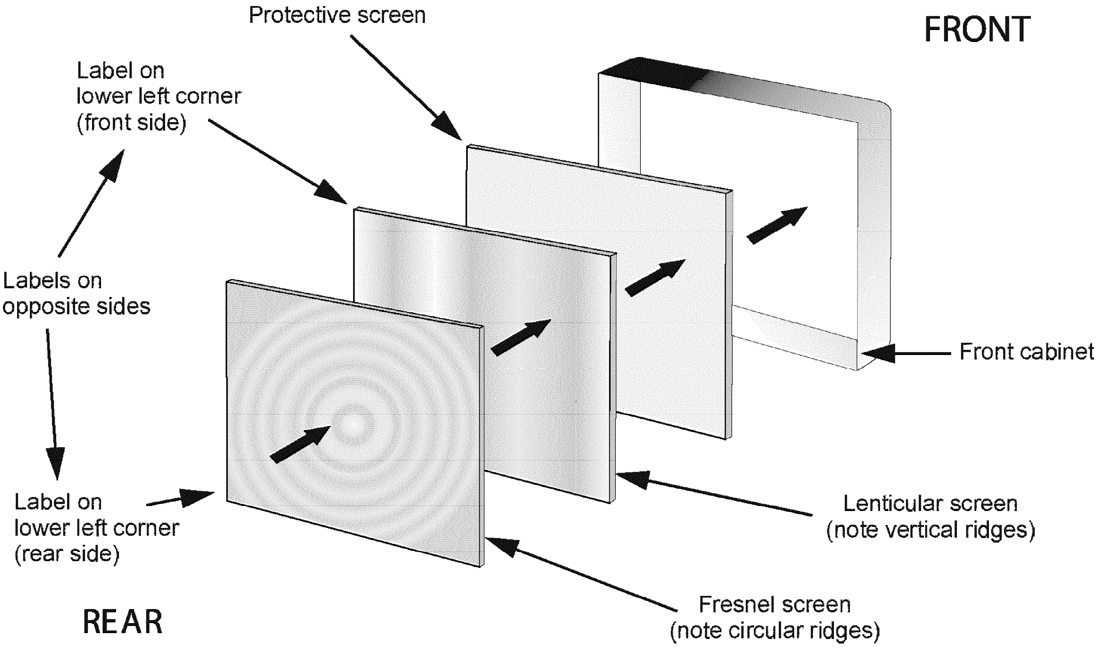
**Optical block position**


51/61
46
51/61
46
51/61
46
51/61
46
51/61
46
51/61
46

**The optical block mounting has holes to allow for the different size projection screens. These mounts will adjust to projection screens. If the optical block is removed for service or is replaced, it is important that the correct mounting holesare used.**

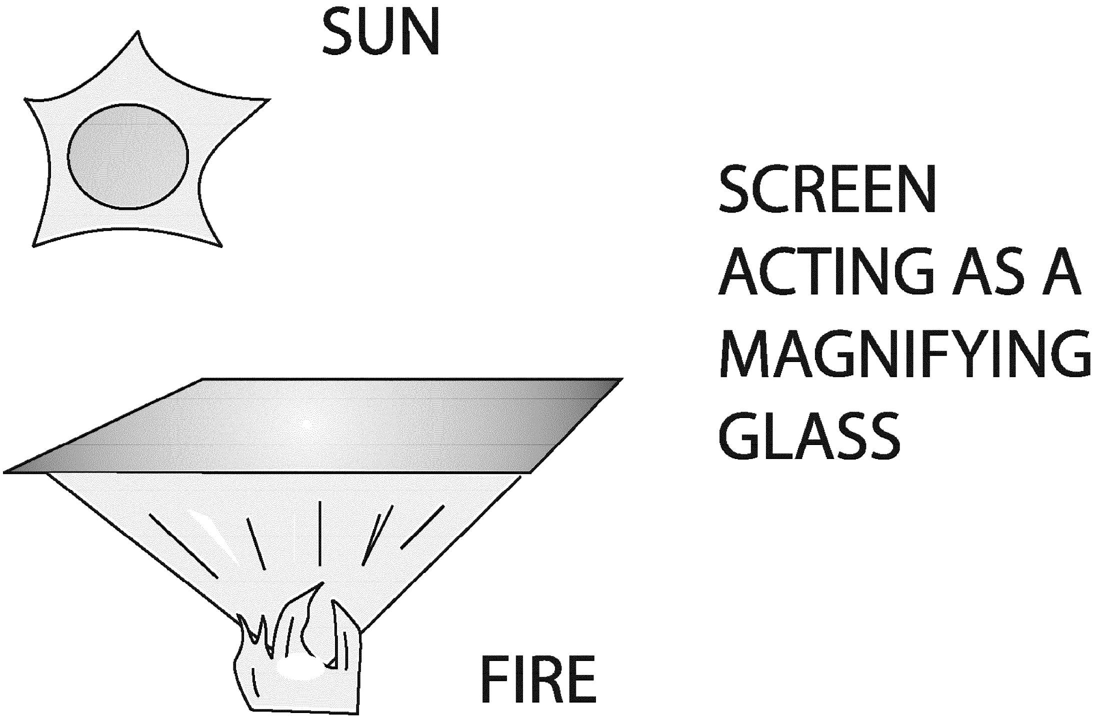
## 14.3. PTV screen assemblies

**Screen assemblies**


Protective screen
FRONT
Label on lower left corner (front side)
Labels on opposite sides
Front cabinet
Label on lower left corner (rear side)
Lenticular screen (note vertical ridges)
REAR
Fresnel screen (note circular ridges)

## 14.4. Screen assemblies warning

**When storing or disposing of screen assemblies, be sure not to place them in direct sunlight. These screens may act as a magnifying glass and could cause a fire.**


SUN
SCREEN ACTING AS A MAGNIFYING GLASS
FIRE

## 15. B+ voltages table

**Preparation:**

**Set the following controls**

- **Picture to Normal**
- **Bright to Normal**
- **Volume to MIN (0)**

**Procedure:**

1. **Apply a NTSC COLOR BAR pattern**
2. **Connect the negative lead of the digital voltmeter to TPGND1 (cold ground).**
3. **Connect the positive lead of the digital voltmeter to each test point and confirm the B+ voltages.**

| No. | D-Board Test point | Voltage |
|---|---|---|
| 1 | TPD14 | 138.6±1.0 |
| 2 | TPD13 | 19.0±1.5 |
| 3 | TPD12 | 19.0±1.5 |
| 4 | TPD11 | -19.0±1.5 |
| 5 | TPD10 | 22.0±1.5 |
| 6 | C845 (-) | -22.5±1.5 |
| **No.** | **A-Board Test points** | **Voltage** |
| 1 | TPA031 | 9.0±0.5 |
| 2 | TPA030 | 5.0±0.5 |

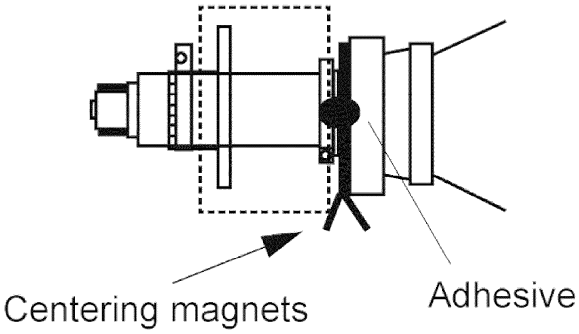
# 16. CRT Set Up

**CAUTION:**

**Insure yoke plugs on the A Board are reconnected before turning the PTV ON to prevent damage to the horizontal output transistor and/or CRTs.**

1. **Connect test generator to the antenna terminal and set for a monoscope pattern.**
2. **Loosen yoke clamp, seat yoke against bell of CRT and rotate to correct yoke tilt (compare to adjacent CRT). Tighten yoke clamp.**
3. **Remove adhesive from centering tabs and set centering tabs for zero correction.**

**Adhesive removal**



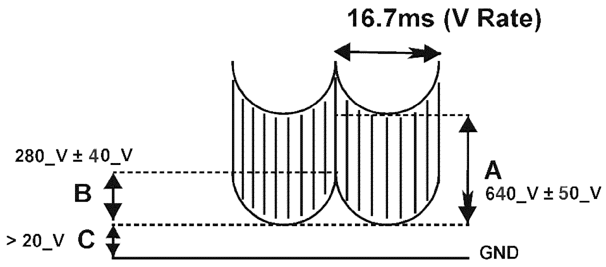
4. **Cover replacement CRT lens and static converge the tubes not replaced, if needed. Check size and linearity of pattern and adjust as required**
5. **Uncover replacement CRT lens and cover other two CRT lenses. Adjust electrical and optical focus (lens), if required.**
6. **Uncover all CRT lenses and use yoke centering magnet to converge replacement CRT (in center area of screen only) with other two CRTs. Disregard of convergence in areas other than center area.**
7. **Perform white balance adjustments.**

## 16.1. Dynamic focus adjustments

1. **Focus adjustments should be performed after 1 hour of aging.**
2. **Use oscilloscope with 100 : 1 probe.**
3. **Apply a NTSC crosshatch pattern to adjust focus.**
4. **Adjust the red, blue and green focus VR on the focus block for best**

**focus of overall picture of each CRT.**

**D. focus adjustment waveform**



**5. To change DAF DATA, enter to service mode, then press POWER on remote to display DACs menu, then select DAC by pressing CH (RIGHT/ LEFT) and VOL (UP/DOWN), then press ACTION to enter to DAC, then adjust by pressing VOL (RIGHT/LEFT);press ACTION, to save press ACTION again or OTHER to exit without saving.**

**Procedure:**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set top box DTV decoder.**

**1. Enter to service mode and set the following default DATA**

| | NTSC | NTSC ZOOM | 1080i |
|---|---|---|---|
| H-PARA | +170 | +170 | +170 |
| V-SAW | 0 | 0 | 0 |
| V-PARA | +14 | +14 | +16 |

**NOTE:**
**The signal (NTSC, 1080i and NTSC in ZOOM option), should be applied and displayed to enter values for specific format adjustment.**

**2. For 1080i set the default values.**

**3. For NTSC and NTSC ZOOM apply a white pattern and perform the following steps.**

**4. Connect the scope probe to D33, GND to Q551 heat sink.**

**5. Confirm that level of A is 640 ± 50_V, adjust / "H-PAR" DAC to set to specification level.**

**6. Confirm that the voltage level in D33 is similar between point E and F, if not, adjust V-SAW DAC.**

**7. Confirm that level of B is 280 ± 40_V, adjust / "V-PAR" DAC to set to**

**specification level.**

8. **Confirm that level of C is more than 20 V, adjust / “H-PAR” DAC to set to specification level.**

## 16.2. Focus - Electrical& optical adjustments

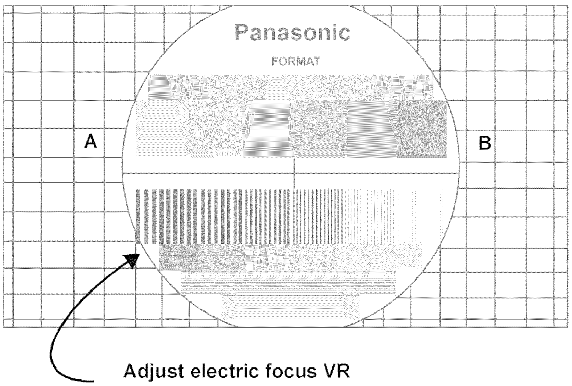
**(use for minor adjustment or for final adjustment, for complete adjustment see following section.)**

**Electrical Adjustment**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic’s TU-DST51 set-top box DTV decoder.**

1. **Apply a NTSC crosshatch with dots pattern**

**Lens focus adjustment**

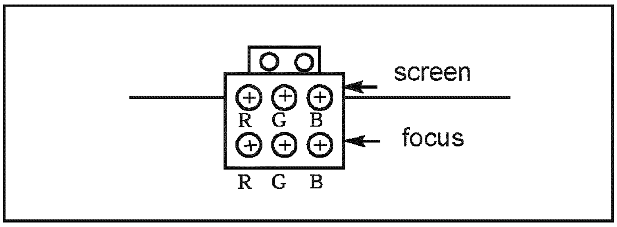


Adjust electric focus VR
and lens focus on this circle

| | RED | GREEN | BLUE |
|---|---|---|---|
| Electric focus | B | A/B | A |
| Optical Focus | B | A/B | A |

2. **Set VIDEO “C_OFF” DAC from 00 to 02, and project only red. Adjust red focus VR so that focus is best**

**Focus pack**



3. **Adjust red lens focus (mechanical) until focus is best.**
4. **Adjust red focus VR again.**
5. **Set VIDEO “C_OFF” DAC from 00 to 01, and project only green.**

6. **Repeat steps for green only.**
7. **Set VIDEO “C_OFF” DAC from 00 to 03, and project only blue.**
8. **Repeat steps for blue only.**

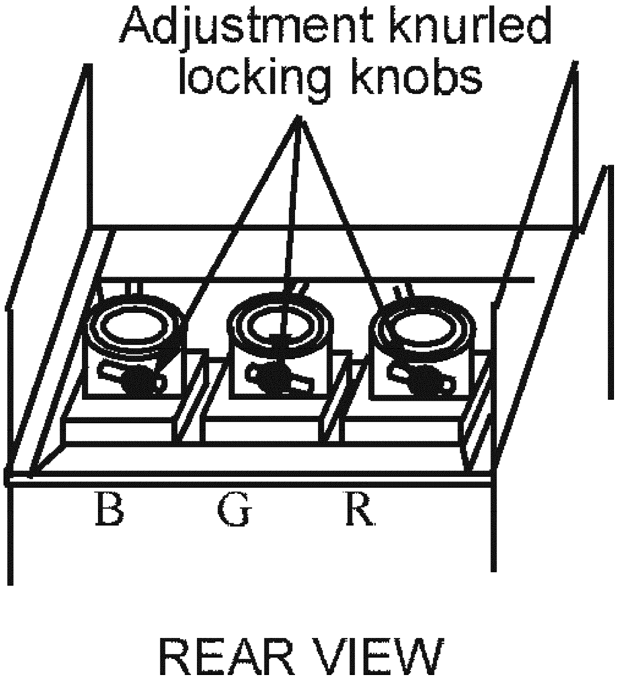
### 16.2.1. Focus - Optical lens adjustment

**Optical adjustments**

**NOTE:**
**This adjustment normally should not require resetting unless the lens has been replaced or adjustment has changed.**

1. **Optical focus adjustment is located on the top of each CRT lens system. Loosen the adjustment knurled locking knob.**

**Optical lens focus adjustment**



2. **Turn the PTV ON. Apply and view a crosshatch with dots pattern.**
3. **Adjust each lens focus for best focus while viewing each CRT.**
4. **Cover the red and blue CRT, projecting green only. Rotate the green lens for best focus around screen center area.**
5. **Do the same for the red focus lens while projecting red only.**
6. **Repeat for blue.**
7. **Align VM coils.**

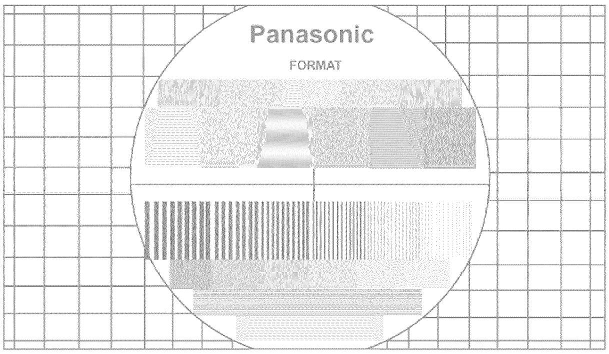
# 17. Electronic Adjustments

## 17.1. NTSC Horizontal phase adjustment (H POS)

**This adjustment is intended to correct the horizontal position of the picture**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder.**

1. **Apply a NTSC pattern that lets adjust the image to correct vertical size (see above note).**
2. **Set VIDEO "C_OFF" DAC from 00 to 01 (to project only green).**
3. **Set DAC MUTE from 00 to 01 (disabling digital convergence).**
4. **Turn green deflection yoke until line is perfectly horizontal.**
5. **Adjust "H POS" DAC data so that pattern is in the center of screen**
6. **Enable digital convergence by changing DAC MUTE from 01 to 00.**
7. **Set VIDEO "C_OFF" DAC from 01 to 00**

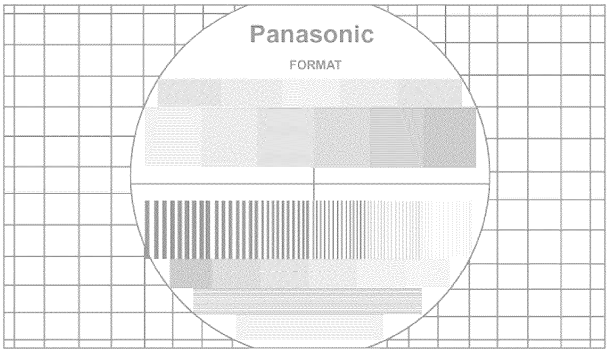


## 17.2. HD 1080i Horizontal phase adjustment (H POS)

**This adjustment is intended to correct the horizontal position of the picture for HD 1080i mode.**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder.**

1. **Apply a HD 1080i pattern (see above note).**
2. **Repeat NTSC horizontal phase adjustment from step 2**



## 17.3. Centering magnets adjustment

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder.**

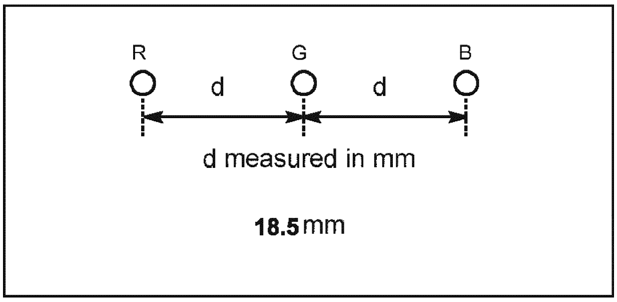
**Procedures:**

1. **Apply a NTSC crosshatch pattern with dots.**
2. **Set VIDEO "C_OFF" DAC from 00 to 01 to project only green.**
3. **Set DAC MUTE from 00 to 01 (disabling digital convergence).**
4. **Loosen the deflection coil screw on the green CRT.**
5. **Adjust green deflection coil until the horizontal center line is horizontal.**
6. **Adjust centering magnets until the green pattern is equal on left and right. Adjust also for horizontal and vertical tilt.**

**NOTE:**
**Push deflection coil to top of CRT neck, then tighten deflection screw after adjusting each CRT centering and tilt.**

7. **Set VIDEO "C_OFF" DAC from 01 to 03 to project only blue. Adjust deflection coil until the horizontal center line matches the pattern of the grid and is leveled.**
8. **Adjust blue centering magnets until the pattern center is at the appropriate distance as indicated on the following figure.**

**Centering magnets adjustment**



9. Set VIDEO “C_OFF” DAC from 01 to 02 to project only red.
10. Adjust red deflection coil until the horizontal center line matches the pattern of the grid and is leveled.
11. Adjust red centering magnets until the pattern center is at the appropriate distance as indicated on figure.
12. Enable digital convergence by changing DAC MUTE from 01 to 00.
13. Set VIDEO “C_OFF” DAC from 02 to 00. Following the adjustment, make sure that all deflection coils are pushed completely toward the CRT cones and that all screws are tightened.

## 17.4. NTSC Vertical linearity adjustment (V-C and V-S)

**This adjustment is intended to make the picture vertically proportional (top, center and bottom) for NTSC mode**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic’s TU-DST51 set-top box DTV decoder.**

1. Apply a NTSC pattern that lets adjust the image to correct vertical linearity (see above note).
2. Set VIDEO “C_OFF” DAC from 00 to 01 (to project only green).
3. Set DAC MUTE from 00 to 01 (disabling digital convergence).
4. Adjust centering magnets so that the center of the pattern get aligned with screen frame center.
5. Adjust VDEF “V-C” and “V-S” DAC until vertical size is proportional on top and bottom. Confirm to correct linearity in the middle of the screen.
6. Set DAC MUTE from 01 to 00 (disabling digital convergence).
7. Set VIDEO “C_OFF” DAC from 01 to 00

## 17.5. HD 1080i Vertical linearity adjustment (V-C and V-S)

**This adjustment is intended to make the picture vertically proportional (top, center and bottom) for HD 1080i mode**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic’s TU-DST51 set-top box DTV decoder.**

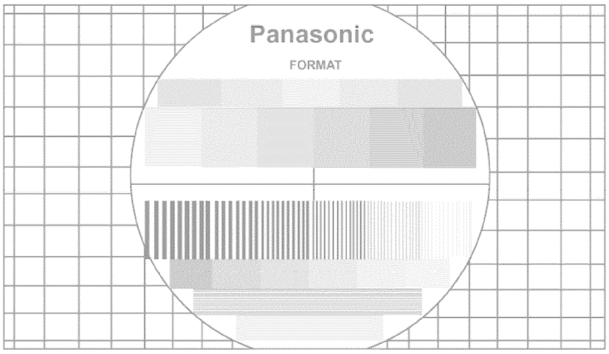
1. **Apply a NTSC pattern that lets adjust the image to correct vertical linearity (see above note).**
2. **Repeat NTSC vertical linearity adjustment from step 2**

## 17.6. NTSC Vertical size adjustment (V-AMP)

**This adjustment is intended to correct the vertical size of the picture for NTSC mode**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic’s TU-DST51 set-top box DTV decoder.**

1. **Apply a NTSC pattern that lets adjust the image to correct vertical size (see above note).**
2. **Set VIDEO “C_OFF” DAC from 00 to 01 (to project only green).**
3. **Set DAC MUTE from 00 to 01 (disabling digital convergence).**
4. **Adjust centering magnets so that the center of the pattern get aligned with screen frame center.**
5. **Adjust VDEF “V-AMP” DAC until vertical size is proportional on top and bottom.**
6. **Set DAC MUTE from 01 to 00 (disabling digital convergence).**
7. **Set VIDEO “C_OFF” DAC from 01 to 00**



## 17.7. HD 1080i Vertical size adjustment (V AMP)

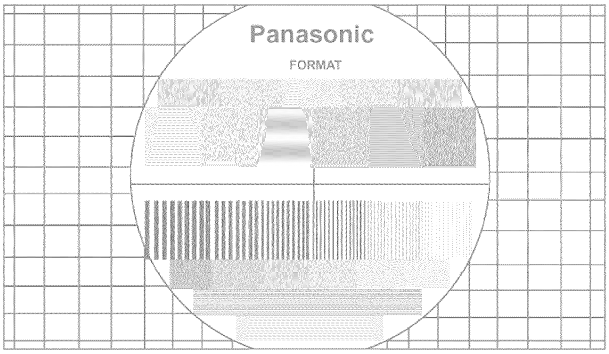
**This adjustment is intended to correct the vertical size of the picture for HD 1080i mode.**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic’s TU-DST51 set top box DTV decoder.**

1. **Apply a HD 1080i pattern that lets adjust the image to correct vertical**

size (see above note).

2. Repeat NTSC vertical size adjustment from step 2

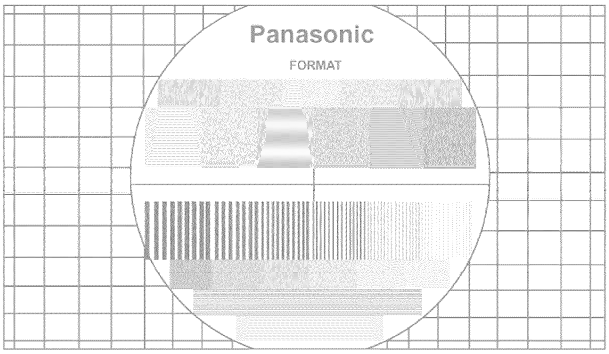


## 17.8. NTSC ZOOM Vertical size adjustment (V AMP)

**This adjustment is intended to correct the vertical size of the picture for NTSC ZOOM mode**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set top box DTV decoder.**

1. Apply a NTSC pattern that lets adjust the image to correct vertical size (see above note)
2. Change aspect to ZOOM mode.
3. Repeat NTSC vertical size adjustment from step 2
4. Try making circle seem rounded (in proportion)



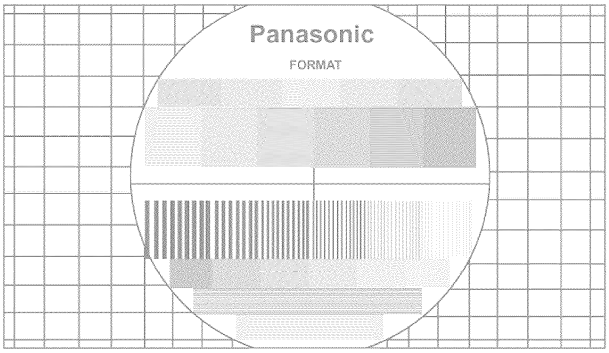
## 17.9. NTSC Horizontal size adjustment / (H_POS)

**This adjustment is intended to correct the horizontal position of the picture for NTSC mode**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder.**

1. Apply a NTSC pattern that lets adjust the image to correct horizontal position (see above note)
2. Set VIDEO "C_OFF" DAC from 00 to 01 to project only green.

3. Set DAC “MUTE” from 00 to 01 (disabling digital convergence).
4. Turn green deflection yoke until line is perfectly horizontal.
5. Adjust “H WID” DAC data so that pattern has the correct horizontal size.



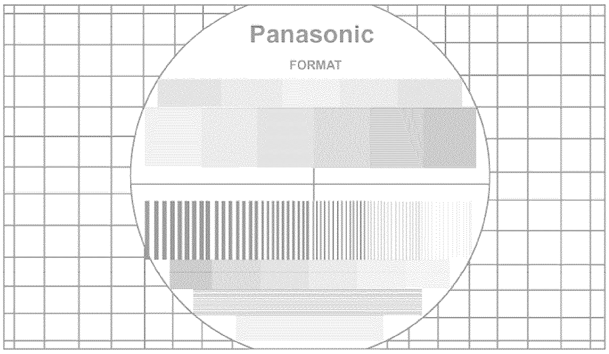
6. Set DAC MUTE from 00 to 01 (disabling digital convergence).
7. Set VIDEO “C_OFF” DAC from 01 to 00.

## 17.10. HD 1080i Horizontal size adjustment (H_POS)

**This adjustment is intended to correct the horizontal position of the picture for NTSC mode**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic’s TU-DST51 set-top box DTV decoder.**

1. Apply a HD 1080i pattern that lets adjust the image to correct horizontal position of the image.
2. Repeat NTSC horizontal size adjustment from step 2



## 17.11. Trapezoid adjustment (TRAP)

1. Set default value

## 17.12. NTSC Pincushion adjustment (PCC)

**This adjustment is intended to correct curved sides of the picture for NTSC mode.**

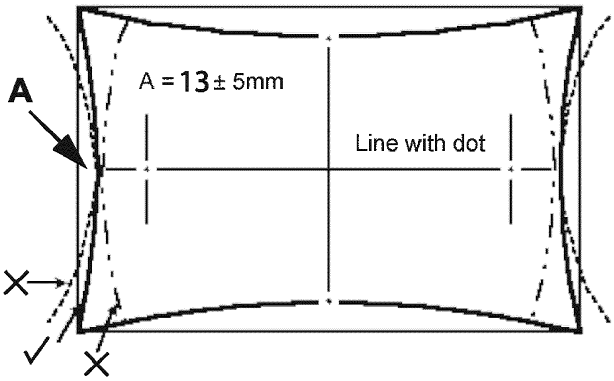
**NOTE:**

**1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder.**

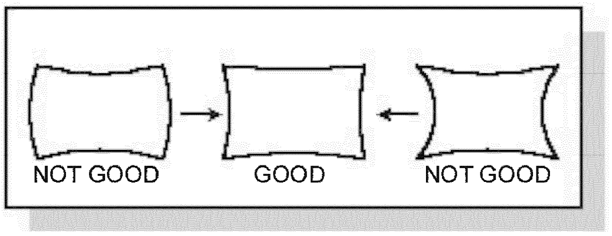
**Procedure:**

1. **Apply a NTSC pattern that lets adjust the image to correct curved sides (see above note)**
2. **Set VIDEO "C_OFF" DAC from 00 to 01 to project only green.**
3. **Set DAC "MUTE" from 00 to 01 (disabling digital convergence)**
4. **If the distance at "A" is not 13 ± 5mm, enter H DEF "H WID" DAC and adjust by VOLUME UP/DOWN until it is 13 ± 5mm.**

**Pincushion adjustment**



**Pincushion**



5. **If not all corners of cross hatch appear in screen, enter V DEF "V-AMP" DAC and adjust until they appear.**
6. **Confirm that measurement of "A" has not changed.**
7. **Enable digital convergence by changing DAC MUTE from 01 to 00.**
8. **Set VIDEO "C_OFF" DAC from 01 to 00.**

## 17.13. HD 1080i Pincushion adjustment (PCC)

**This adjustment is intended to correct curved sides of the picture for HD 1080i mode.**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder.**

**Procedure:**

1. **Apply a HD 1080i pattern that lets adjust the image to correct curved**

sides (see above note).

2. Repeat NTSC pincushion adjustment from step 2

## 17.14. NTSC Horizontal size adjustment (H WID)

**This adjustment is intended to adjust horizontal size of the picture for NTSC mode.**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder.**

1. Apply a NTSC pattern that lets adjust the horizontal size.
2. Set VIDEO "C_OFF" DAC from 00 to 01 to project only green.
3. Set DAC "MUTE" from 00 to 01 (disabling digital convergence).
4. In service mode, adjust "H WID" DAC until the picture horizontal size is balanced at left and right side of screen.
5. Set DAC "MUTE" from 01 to 00 (disabling digital convergence).
6. Set VIDEO "C_OFF" DAC from 01 to 00.

## 17.15. HD 1080i Horizontal size adjustment / (H WID)

**This adjustment is intended to adjust horizontal size of the picture.**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder**

1. Apply a HD 1080i pattern that lets adjust the horizontal size.
2. Repeat NTSC horizontal size adjustment from / step 2.

## 17.16. NTSC and HD 1080i Sub-Bright adjustment (BRIGH) and ABL check

**This adjustment is intended to set 7 IRE signal to black level mode.**

**Procedure:**

1. Set PICTURE MODE TO VIVID, PICTURE settings to normal, NATURAL COLOR to OFF and COLOR TEMPERATURE to NORMAL.
2. Connect meter (positive lead) to D31 pin 2 and (negative lead) to D31 pin 1.
3. Apply a NTSC color bar with no color or if available a grey levels pattern.
4. Adjust DAC "BRIGH" data so that bar near to black bar becomes near black
5. Apply an HD 1080i signal and repeat this adjustment for HD 1080i mode

6. To check ABL apply a white pattern and put user bright control to max. and confirm that reading on meter is 12.4 ± 0.8_V.

## 17.17. Red, green& blue screen Cut-Off

1. Use either a no input signal condition or raster from the NTSC generator.
2. Observing the green tube directly or via a reflective surface, adjust the VR on focus pack for the green tube for minimum noise.
3. Adjust the noise level in the red and blue tubes to match the noise level in the green tube.

## 17.18. White balance adjustment

**NOTE:**
**1080i, 480p, 480I pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder.**

**Prior to this adjustment, perform sub-contrast adjustment. This adjustment requires that the service use skills in observing what a screen without color should look like (white picture).**

**Preparation:**

1. Set the following in the user picture menu as follows:
    - PIC MODE to VIVID
    - COLOR to center (31)
    - PICTURE to max (63)
    - BRIGHT to center (31)
    - SHARPNESS to min. (0)
    - TINT to center (31)
    - NATURAL COLOR to OFF
    - COLOR TEMPERATURE to COOL

1. Enter the service mode.
2. Apply a NTSC black and white pattern to one of the video inputs (see above note) color bar with no color.

### 17.18.1. High light white balance adjustment

1. Adjust DAC R_DR for red and B_DR for blue adjustments.
2. Make sure the screen is not blue or green. The screen should be white

**in the white area.**

3. **Check the black and white area for a black and white picture with even shades of gray and no color tint in the picture.**

### 17.18.2. Low light white balance adjustment

1. **Adjust DAC CUT_R for red and DAC CUT_B for blue.**
2. **Check the screen for even white in all areas, no color.**
3. **Check the black and white pattern for a black and white picture, even shades of gray and no color tint in the low light areas.**
4. **Repeat the high light and low light white balance again until the white balance tracks from high light to low light.**

## 17.19. NTSC Color adjustment (TINT, B-Y_G, R-Y_A)

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder.**

**This adjustment requires that the servicer use its skills in observing what a colorbar pattern should looks like.**

**Preparation:**

1. **Set the following in the user picture menu as follows:**

   - **PIC MODE to VIVID**
   - **COLOR to center (31)**
   - **PICTURE to max (63)**
   - **BRIGHT to center (31)**
   - **SHARPNESS to min. (0)**
   - **TINT to center (31)**
   - **NATURAL COLOR to OFF**
   - **COLOR TEMPERATURE to COOL**

**Procedure:**

1. **Apply a NTSC color bar pattern**
2. **Adjust DAC "TINT" so that the fourth bar from right to left becomes purple and good color balance.**
3. **If the adjustment is high, the bar will look pinkish, if it is low will look bluish.**

4. Adjust “B-Y_G” so blue look natural, and the rest of the colors become in balance.
5. Adjust “R-Y_A” so red look natural, and rest of the colors become in balance.
6. Check that white bar is real white, no bluish or reddish or tending to become grey.

## 17.20. 1080i Color adjustment (TINT, B-Y_G, R-Y_A)

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic’s TU-DST51 set-top box DTV decoder.**

1. Set same settings as NTSC adjustment
2. Apply a 1080i signal, and repeat adjustments as from step 2 in NTSC adjustment.
3. If pattern is not available, use a color signal in 1080i and adapt the adjustment to that available signal.

## 17.21. Tint and color check

**Set picture mode to VIVID mode. Again, the service ability to see color and the balance of color is important for theses adjustments.**

Tint check

1. In picture menu set PICTURE NORM to YES.
2. Apply color bars to the video input.
3. Magenta is composed of two colors, blue and red.
4. Check to see that magenta does not have too much blue or too much red.
5. Check cyan. Cyan is composed of blue and green. It should not have too much blue or green.
6. Use a test signal from a VCR or laser disk that has a pre-recorded close up of a signal that has good flesh tones.
7. The signal on the VCR or laser disk should look normal.

Color Check

**Using a clean RF or video signal, set the color level so that it does not saturate or appear harsh. Make**

**sure that color is not set so that it appears dull and washed out. Look for natural colors, try to adjust the picture to appear as a normalphotograph.**

## 17.22. MTS circuit adjustment

**Note:**
**It is important to adjust the MTS circuit in the order shown below.**
**The MTS circuit adjustment require two steps:**

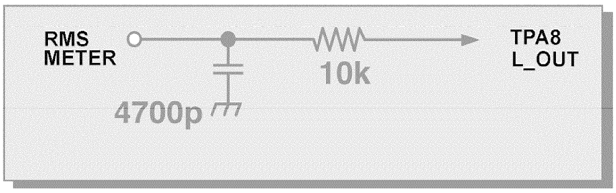
1. **Input level adjustment.**
2. **Stereo separation adjustment.**

**Input level adjustment (MTSIN)**

**Preparation:**

1. **Connect an RMS meter (A.C. range) with filter jig as shown**

**Filter jig**



2. **Connect an RF signal generator to the RF antenna input.**

**Procedure:**

1. **Apply the following signal from the RF signal generator: / Video: 100 IRE flat field, 30% modulation. / Audio: 300Hz, 100% modulation, monaural (70 ± 5dB, 75 Ω open, P/S 10dB).Make sure to turn off 75 μ s pre-emphasis.**
2. **Adjust DAC “MTSIN” MTS-INPUT data until the voltage measured is 106 ± 6.0mV RMS.**

**Stereo separation adjustment (SEPAL & SEPAH)**

**Preparation:**

1. **Connect an RF signal generator to the RF antenna input.**
2. **Connect an oscilloscope probe to TPA7 (R_out).**

**Procedure:**

1. **Set PTV to Stereo Mode (in the audio menu).**
2. **Apply the following signal from the RF signal generator: / Video: 100 IRE flat field, 30% modulation. / Audio: 300Hz, 30% modulation, stereo (left only) (70dB ± 5dB, 75 Ω OPEN, P/S 10dB).**

**Note:**
**Set the 30% modulation with the pilot light SW and N.R. switches OFF then turn them ON while testing.**

3. **Adjust MTS low-level separation “SEPAL” DAC data (in the service menu) until the amplitude of the measured waveform on the scope is minimum.**
4. **Apply the following signal from the RF signal generator: / Video: 100 IRE flat field, 30% modulation. / Audio: 3KHz, 30% modulation, stereo (left only). / (70dB ± 5dB, 75 Ω OPEN, P/S10dB).**

**Note:**
**Set the 30% modulation with the P.L and N.R. switches OFF then turn them ON while testing.**

5. **Adjust MTS High-Level Separation “SEPAH” DAC data until the amplitude of the waveform measured on the scope is minimum.**
6. **Repeat above steps 2 through 5 until the amplitude is at minimum for both signals.**

## 17.23. Clock Adjustment (CLOCK)

**Preparation:**
**Connect the frequency counter from TPA9 (A-Board) to cold ground.**

**Note:**
**Frequency Counter probe capacitance should be 8pF or less.**

**Procedure:**

1. **Turn the PTV “ON” with the A.C. power applied.**
2. **Measure TPA9 for frequency and record the reading.**

**Note:**
**Pin 10 measurement must have at least four digits of resolution following the decimal point. Example: 000.0000**

3. **Place the PTV into service mode for making electronic adjustment, select the clock adjustment DAC CLOCK and change value to 128.**
4. **Calculate and set CLOCK based on the following formula:**

$$CLOCK = 128 + 0.450x106x\frac{\{732.422 - TPA9[\mathrm{Hz}]\}}{732.4220}$$

**Note:**
**TPA9 measurement will not change regardless of the value stored in CLOCK.**

# 18. Convergence adjustment

**Turn PTV on and allow it to warm up for 30 minutes prior to perform adjustments (apply a WHITE PATTERN).**

**Helpful Hint:**
**EEPROM jig can be used to adjust convergence, by copying convergence adjustment from a convergence adjusted PTV to other. Refer to EEPROM copy jig section on this service manual. Also EEPROM copy jig can be used to back-up the data before to performadjustments.**

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder.**

**IMPORTANT NOTICE:**
**It is strongly recommended to first read and understand the following section prior to make any adjustment. / Convergence adjustment must be perform for 480i-p (same for interlace & progressive), ZOOM 480i and 1080i.**

**This PTV uses the scheme described below to correct for misconvergence of the three CRT projection tubes. There are various modes to this operation.**

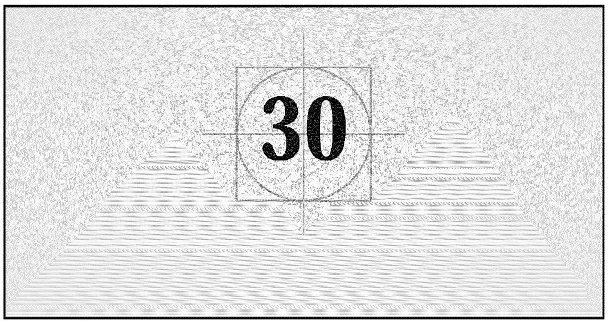
**Preparation:**
**Place the convergence alignment template (see Convergence alignment template section on this manual) over the PTV screen. Align the center lines of the template with the mechanical center markers on the PTV screen frame. If the template is not available,create one using the dimensions provided in Convergence alignment template section on this manual.Remote control must be used during the procedure.**

**Procedure:**
**Apply the convergence alignment template to the PTV screen frame to converge the green raster only. Remove the convergence alignment template following this alignment. The red and blue rasters can then be aligned to the green raster.**

**Raster Set-Up:**

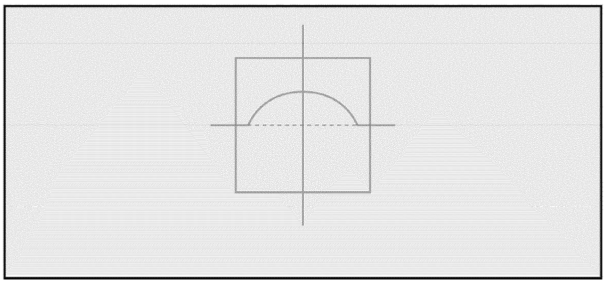
1. **Enter to service mode (red CHK).**
2. **In SET-UP (menu) CONVERGENCE 1 set all values to 0.**
3. **Cover red & blue lens with caps.**
4. **Apply a pattern to adjust specific format:**
    - **NTSC signal to adjust 480i & 480p (same for interlace and progressive).**
    - **480i signal with PTV in ZOOM aspect to adjust Z480i.**
    - **1080i signal to adjust 1080i.**
5. **Select "COARSE" DAC, then press ACTION to enter to "COARSE CONVERGENCE ADJ" mode.**
6. **Press "0" key on remote.**
7. **Press ACTION key on remote to enter to "TEST_POS" mode.**
8. **Move pattern by pressing VOL right - left and CH up - down so that the cursor center overlap monoscope pattern center.**

**Aligned cross-hair pattern with center of picture pattern**



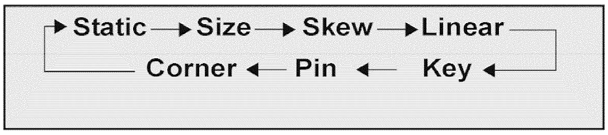
9. **Press "5" key on remote to exit superimpose mode (monoscope pattern disappear).**
10. **Press "TV/VIDEO" key to enter "DATA_POS" mode**
11. **Adjust by pressing VOL right - left so that peak of curve is the same position as center of cursor**

**Symmetrical shape**



12. Press “TV/VIDEO” key on remote to enter “OSD_POS” mode.
13. Press “5” key on remote so that monoscope pattern appears (superimpose mode)
14. Move cursor by pressing VOL right - left and CH up - down so that cursor center overlap monoscope pattern center
15. Press “0” key to go back to “CONVERGENCE ADJ” mode.
16. Press “TV/VIDEO” key to cycle through “COARSE ADJ. MODE” options

“COARSE” modes cycle



17. To change to “FINE ADJUSTMENT MODE” options (“FINE” DAC), press “TV/VIDEO” key on remote for at least 3 seconds, to go back to “COARSE ADJ MODE” options press “TV/VIDEO” onremote again for 3 seconds.
18. In “FINE ADJUSTMENT MODE” options, press “MUTE” key on remote to switch between “cursor” mode and “data” mode.
    - Cursor mode: Allows cursor movement by pressing VOL right - left and CH up - down.
    - Data mode: Allows making adjustment by pressing VOL right - left and CH up - down.
19. Either “COARSE ADJUSTMENT MODE” options or “FINE ADJUSTMENT MODE” options, press “R-TUNE” repeatedly key on remote to cycle through different color adjustments (R, G, B, White)
20. In “FINE ADJUSTMENT MODE” options, press “4” key on remote to ADD crossed sections to pattern and make effect visible between crossed sections.
21. To store adjustments press “7”, then “ACTION” key on remote,

**otherwise press “POWER” then “ACTION” to exit adjustments without saving.**

## 22. Remote functions, PRESS:

| PRESS BUTTON | TO |
|---|---|
| 1(forward) or 3(back) | change viewed color |
| 2 | change pattern |
| 4 (only FINE mode) | change crossed sections |
| 5 | overlap |
| * 7 | save data |
| 8 | copy from |
| 9 | clear |
| POWER | exit |
| RECALL | display values |
| R-TUNE | cycle colors |
| TV/VIDEO | change mode |
| TV/VIDEO (3 secs) | switch convergence mode (FINE/ COARSE) |

*****
**When “7” is pressed and the data is saved, it will overwrite the factory default.**

## 18.1. Coarse adjustment mode (COARSE)

**NOTE:**
**1080i, 480p, 480i pattern can be obtained from Panasonic’s TU-DST51 set-top box DTV decoder.**

**NOTE:**
**It is strongly recommended to first read and understand the following section prior to make any adjustment. / Convergence adjustment must be performed for 480i_p (same for interlace & progressive), ZOOM 480i and 1080i.**

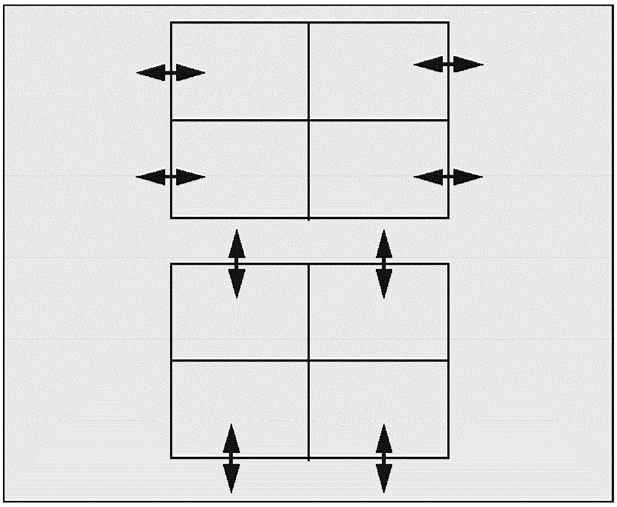
**Procedure:**

## 1. Enter to “G-SIZE” mode:

- **Select “COARSE” DAC**
- **Press ACTION on remote**
- **TV/VIDEO (repeatedly)**
- **R-TUNE (repeatedly)**

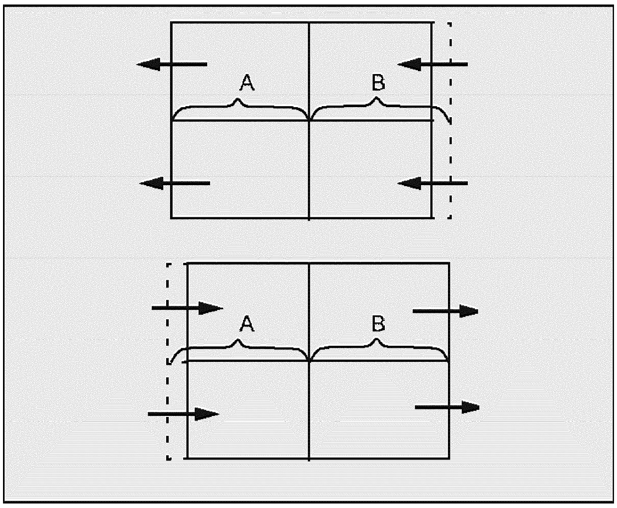
2. Press “2” repeatedly and apply the pattern of border and cross.
3. Press RECALL to display values
4. Adjust size so that the line of the border closes to the screen frame at top, bottom, left and right, by pressing CH up-down and VOL right-left

“SIZE” mode adjustment



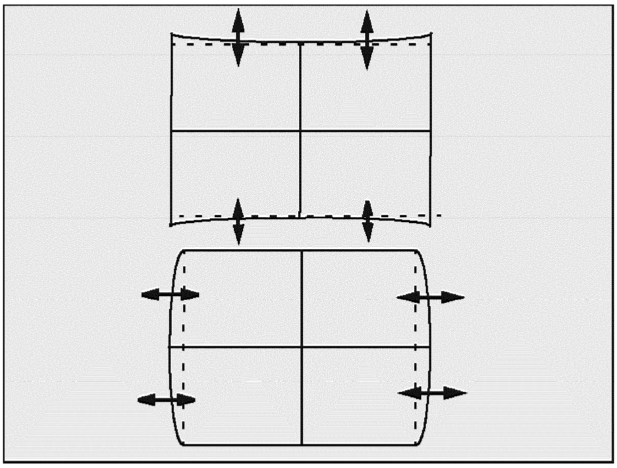
5. Press “7” then “ACTION” key on remote to save changes.
6. Enter to linearity “G-LINEAR” mode by pressing “TV/VIDEO”.
7. Adjust linearity by pressing VOL right-left until A=B.

“LINEAR” mode adjustment



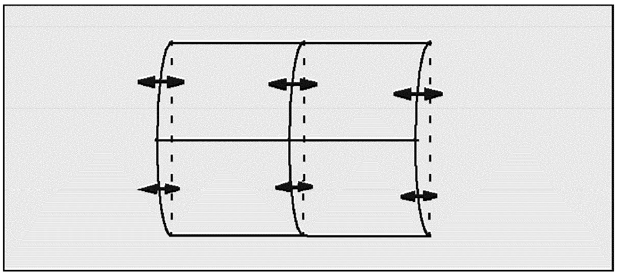
8. Press “7” then “ACTION” key on remote to save changes.
9. Enter to PIN “G-PIN” mode by pressing “TV/VIDEO”
10. Adjust V_PIN by pressing CH up-down (see figure)
11. Adjust H_PIN by pressing VOL right-left.
12. Press “7” then “ACTION” key on remote to save changes

**“PIN” mode adjustment**



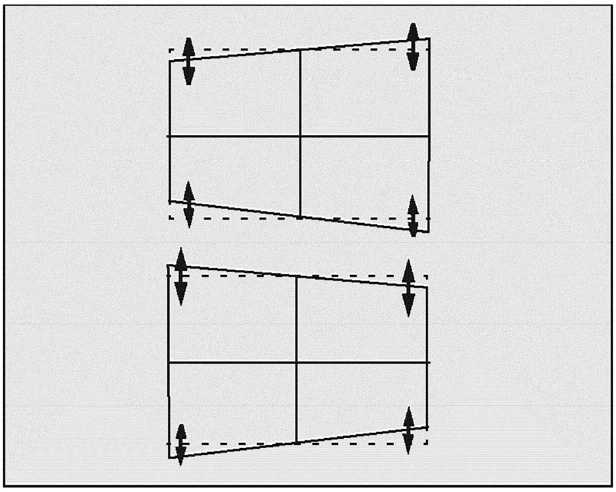
13. Press “7” then “ACTION” key on remote to save changes
14. Adjust by pressing VOL right-left (see figure)
15. Press “7” then “ACTION” key on remote to save changes

**“CORNER” mode adjustment**



16. Enter to KEY “G-KEY” mode by pressing TV/VIDEO.
17. Adjust by pressing CH up-down (see figure)
18. Press “7” then “ACTION” key on remote to save changes

**“KEY” mode adjustment**



**NOTE:**

**Confirm that pattern looks like a square and almost overlaps the screen frame, check that vertical and**

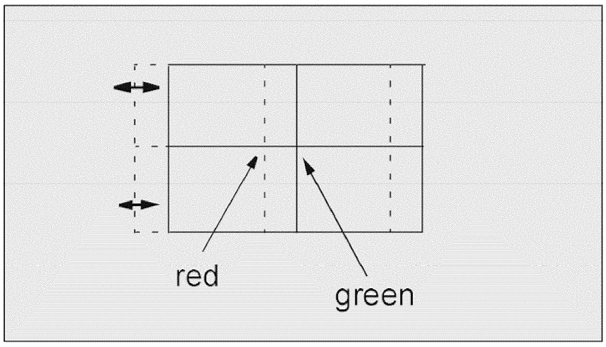
**horizontal line center match with the marks on screen frame, if linearity is not good enough, repeat adjustments.**

**19. Enter to "STATIC" mode by pressing TV/VIDEO.**

**20. Press "1" or "3" repeatedly until green and red only are shown.**

**21. Adjust "R-STATIC" so that the center of red overlaps with the center of green**

**"STATIC" mode adjustment**

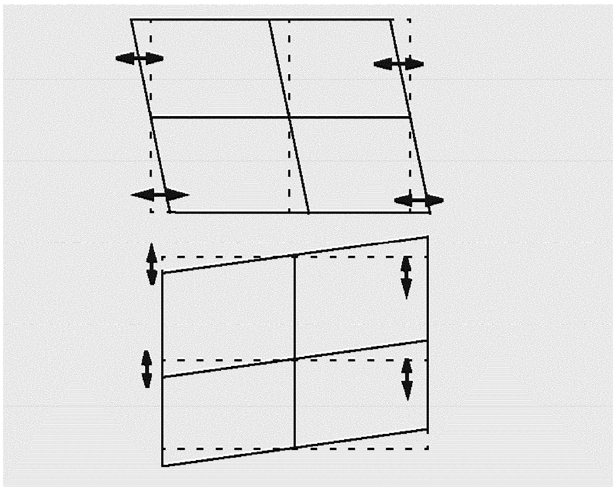


**22. Enter to SKEW "R-SKEW" mode by pressing TV/VIDEO**

**23. Adjust "R-SKEW" so that the vertical and horizontal line of center overlaps with green (see figure)**

**24. Press "7" then "ACTION" key on remote to save changes**

**"SKEW" mode adjustment**



**NOTE:**
**Remember always save data following each adjustment by pressing "7" key on remote, then ACTION.**

**25. Enter to LINEARITY "R-LINEAR" mode by pressing TV/VIDEO.**

**26. Adjust Horizontal linearity (see figure)**

**27. Enter to SIZE “R-SIZE” mode by pressing TV/VIDEO**

**28. Adjust so that the line on the border closes to the screen frame at top, bottom, left and right (see figure)**

**29. Enter to PIN “R-PIN” mode by pressing TV/VIDEO**

**30. Adjust horizontally and vertically (see figure)**

**31. Enter to CORNER “R-CORNER” mode by pressing TV/VIDEO.**

**32. Adjust corners (see figure)**

**33. Enter to KEY “R-KEY” mode by pressing TV/VIDEO**

**34. Adjust KEY (see figure)**

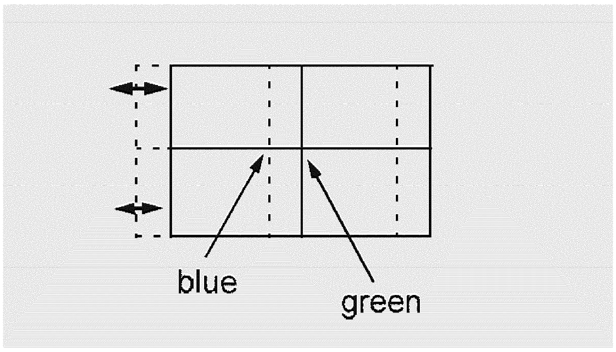
**35. Display pattern of border and cross, then check that red overlaps green pattern, if it is not satisfactory, repeat from step 19.**

**36. Enter to STATIC “B-STATIC” mode.**

**37. Press “1 or 3” key repeatedly on remote until only green and blue pattern are displayed**

**38. Adjust B-STATIC so that the center of blue overlaps with the center of green (see figure)**

**“B-STATIC” mode adjustment**



**39. Perform all adjustments for blue (B-SKEW, B-LINEAR, B-SIZE, B-PIN, B-CORNER, B-KEY)**

**40. Display border and cross pattern and confirm that blue overlaps with green pattern, if it is not satisfactory, repeat for blue.**

**41. Press “1 or 3” key repeatedly on remote until green, red and blue (white), confirm that red and blue overlaps with green pattern.**

**42. Press “7” key on remote, then ACTION to save changes.**

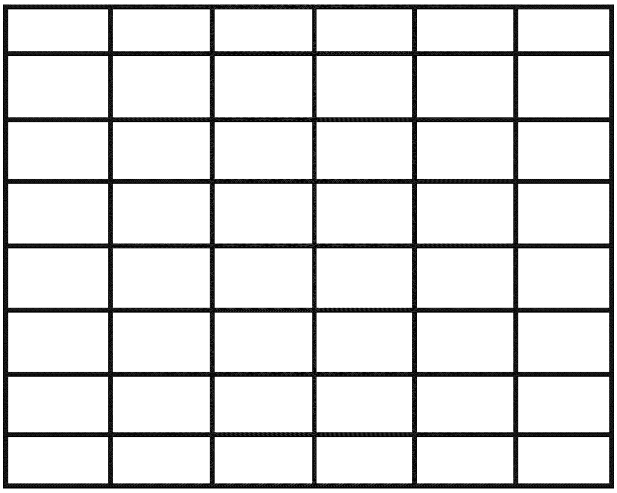
**43. Press POWER then ACTION to exit adjustments or press TV/VIDEO for at least 3 seconds to change to Fine Adjustment Mode.**

## 18.2. Fine adjustment mode (FINE) (convergence)

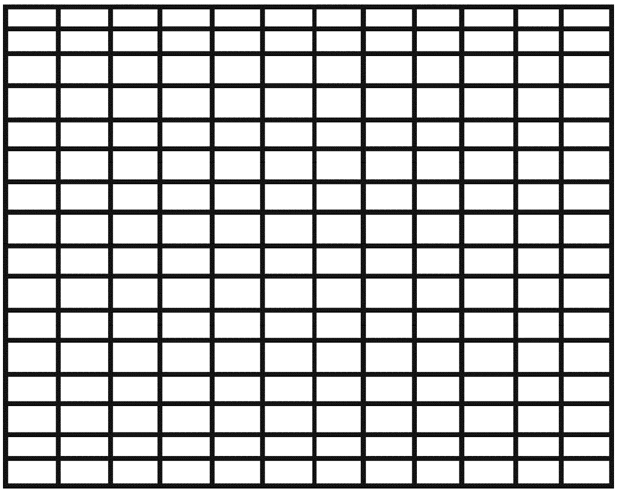
**NOTE:**
**It is strongly recommended to first read and understand the following section prior to make any adjustment. / Convergence adjustment must be perform for 480i-p (same for interlace & progressive), ZOOM 480i and 1080i.**

**HELPFUL HINT:**
**The easiest way to adjust convergence is to start adjusting from the center of the screen to the borders in all the convergence adjustments.**
**Once in “FINE” convergence mode press “4” on remote control frequently to change crossed sections, this helps to check convergence more accurate in more sections of the picture. Please see the following figuresthat show the cycle, this does not have any effect on the positions of the cursor.**

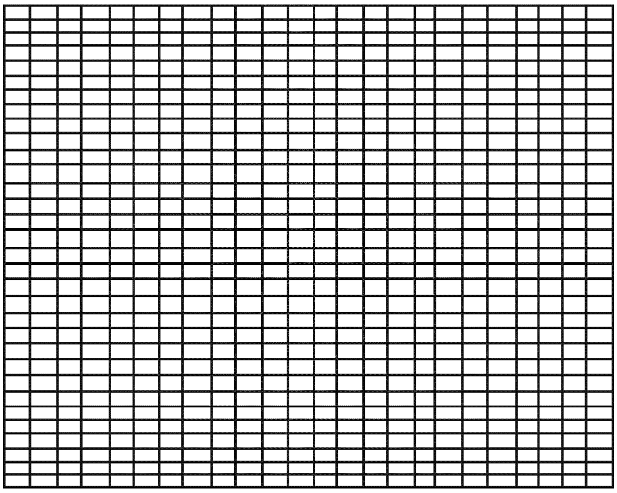
**“FINE” convergence mode default Grid**



**“FINE” convergence mode after pressing “4” on remote**



**“FINE” convergence mode after pressing “4” on remote**



| PRESS BUTTON | TO |
|---|---|
| 1(go) or 3(back) | change color view |
| 2 | change pattern |
| 4 (only FINE mode) | change crossed sections |
| 5 | overlap |
| * 7 | save data |
| 8 | copy from |
| 9 | clear |
| POWER | exit |
| RECALL | display values |
| R-TUNE | cycle colors |
| TV/VIDEO | change mode |
| TV/VIDEO (3 secs) | switch convergence mode (FINE/ COARSE) |

*****
**When "7" is pressed and the data is saved, it will overwrite the factory default.**

**ABOUT PATTERN:**

- **NTSC signal to adjust 480i-p (same for interlace and progressive)**
- **480i signal with ptv in ZOOM aspect to adjust / Z480i**
- **1080i signal to adjust 1080i**

**In "FINE ADJUSTMENT MODE" options, press "MUTE" key on remote to switch between "cursor" mode and "data" mode.**

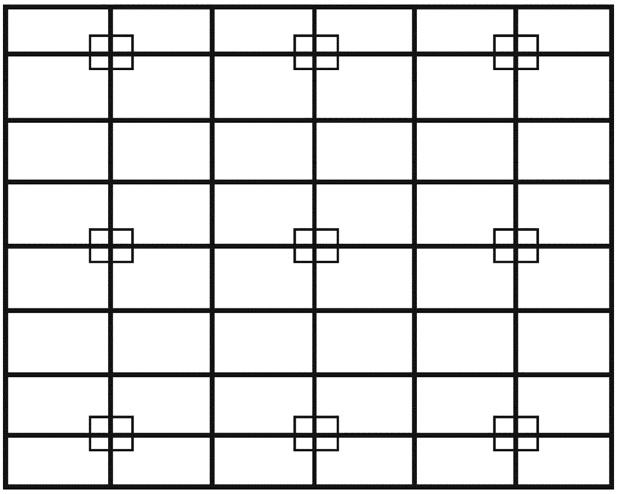
- **Cursor mode (cursor flashing): Allows cursor movement by pressing VOL right - left and CH up - down.**
- **Data mode (cursor fixed): Allows making adjustment by pressing VOL**

**right - left and CH up - down.**

**PROCEDURE:**

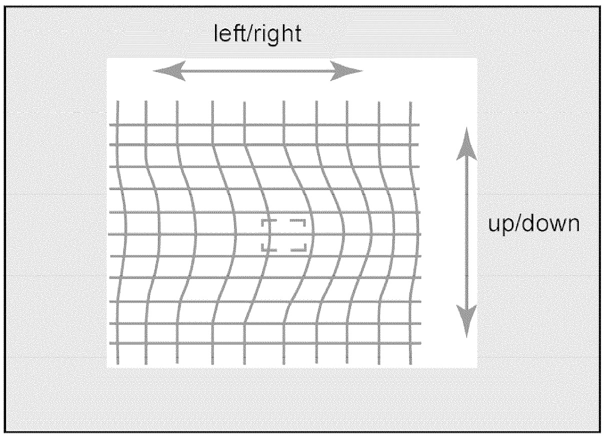
1. **To Enter to “G-EASY” mode (for green):**
   - **Select “EASY” DAC**
   - **Press POWER on remote**
   - **Press TV/VIDEO (repeatedly) to select mode.**
   - **Press R-TUNE (repeatedly) to select color**
2. **Press “2” repeatedly and apply the pattern of crosshatch.**
3. **Press “4” frequently to change crossed sections, this helps to check convergence more accurate in more sections of the picture.**
4. **Press “1 or 3” repeatedly until the pattern becomes green.**
5. **Press RECALL to display values.**
6. **In “EASY” mode, the adjustment value changes by 4 steps**
7. **“EASY” mode allows to move lines horizontally and vertically from the center of cursor**

**“EASY” mode adjustment, possible locations for cursor**



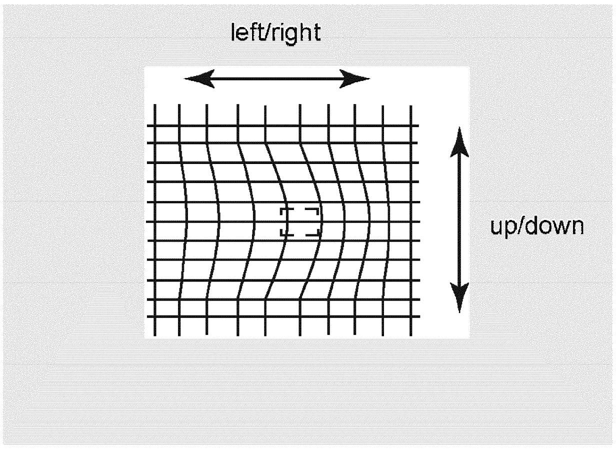
8. **This mode affects a wide area around the cursor than other adjustment modes, See values on screen by pressing RECALL on remote**
9. **Begin adjustment from the center to the edge of the screen.**
10. **Adjust when the cursor is not flashing by pressing CH up/down and VOL right/left on the remote control, if the cursor is flashing press MUTE on the remote**

**“EASY” mode adjustment**



11. To move the cursor press MUTE on the remote (cursor flashes), then move the cursor to any of the positions for "EASY" mode
12. This adjustment may help to make rounded lines become straight lines.
13. Adjust to make lines as straight as possible
14. Enter to POINT "G-POINT" (for green) mode by pressing TV/VIDEO.
15. "POINT" mode allows to move line horizontally and vertically from the perimeter of cursor making rounded lines become straight
16. In "POINT" mode, the adjustment data changes by 2 steps, See values on screen by pressing RECALL on remote
17. When the cursor is located in the outer area of the border the cursor starts to flash from one side to other, the location is for the non-visible area and the most outer side of screen (inside the ovals area, see figure); This applies to "LINE", "POINT" & "ORIGIN.POINT" modes.
18. Begin adjustment from the center to the edge of the screen

**"POINT" & "ORIG. POINT" mode adjustment**



19. Adjust to make lines as much straight as possible

**20. When slightly adjustment is needed, use “ORIG. POINT” mode.**

**21. To enter to “G-ORIG. POINT” (for green) mode press TV/VIDEO.**

**22. With “ORIG. POINT”, the adjustment data changes by 1 step, this allows more detail in the adjustment. Display values on screen by pressing RECALL on remote**

**23. Confirm that green adjustment is good enough, if adjustment is not satisfactory, repeat adjustments.**

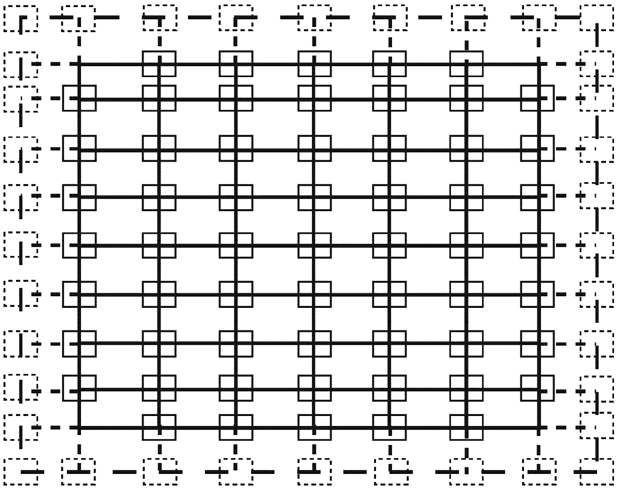
**24. Enter to LINE “G-LINE” mode by pressing TV/VIDEO.**

**25. LINE mode allows to move each single line horizontally and vertically (see figure)**

**26. Begin adjustment from the center to the edge of the screen (see figure)**

**27. Adjust to make distribute lines**

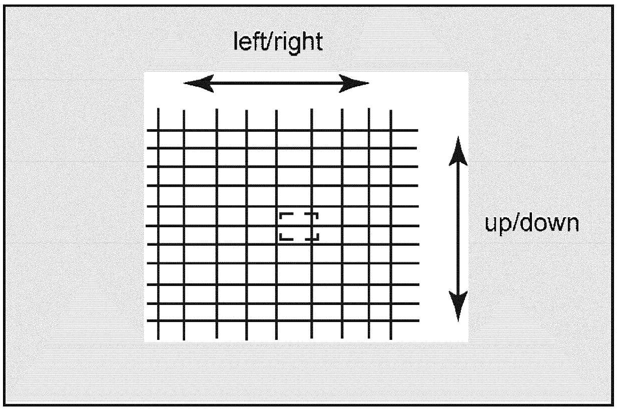
**LINE, POINT, ORIG. POINT modes, possible locations for cursor**



**28. Then press “1 or 3” on the remote until red and green appears.**

**NOTE:**
**Since convergence adjustment will not allows to adjust every single cross section of the grid, it is very important to adjust, so that overall looks best, in “FINE” mode press “4” frequently on remote controlto cycle crosshatch pattern to verify convergence.**

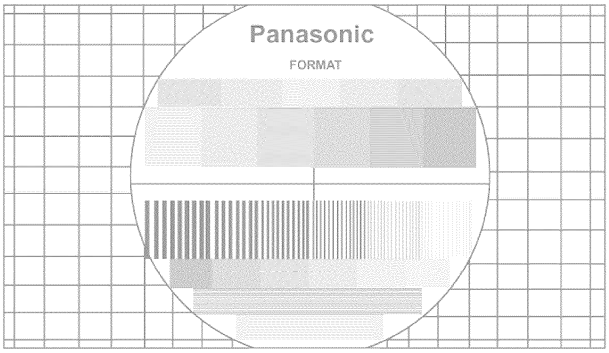
**“LINE” mode adjustment**



29. Perform adjustments for red so that red overlaps green, do not move green.
30. Press “1 or 3” on the remote until yellow (red and green) and blue appears, do not move green or red.
31. Perform adjustments so that blue overlaps Yellow (red and green).
32. Press “1 or 3” key on remote to display red, green and blue (white).
33. At this point the crosshatch pattern should look white.
34. If the crosshatch pattern is not only white, repeat adjustment for that specific color (red or blue).
35. Once the crosshatch pattern looks only white, perform the adjustments for White only (“POINT”, “ORIG. POINT” & “LINE”), notice that each adjustment must be only for white (red, green,blue)
36. Adjust white for a good line distribution and make lines completely straight.
37. Press “7” key on remote, then ACTION to save changes.
38. Press POWER then ACTION to exit convergence adjustments (DACs menu appears).

### 18.3. Horizontal and vertical size check

1. Apply a pattern that permits to check that horizontal and vertical proportion of the image is correct



2. **Confirm that horizontal and vertical center of the picture is located in the center of the screen.**
3. **Check that the image is proportional horizontally and vertically, proportion is different on every aspect.**

## 18.4. Convergence alignment template

**The convergence alignment template is a grid approximately the size of the viewing screen used to ensure the proper size and shape of the alignment rasters. It is 6 blocks across by 8 blocks high. The grid dimensions vary with the mode of operation.Applya convergence alignment template to the viewing screen of the PTV. Make sure the center lines are properly aligned. If a template is not available, one can be created by following the instructions below.Create a convergence alignment template by drawing apattern, as in the figure, in the actual dimensions on transparent film or tracing paper. Start with the Horizontal and Vertical Center Axis and work outwards until the pattern is complete. Pay attention to the actual dimensions of the pattern.**

**Template dimensions:**

**- 53” Models: 1036mm horizontal x 584mm vertical.**

**- 53” Models: 1036mm horizontal x 584mm vertical.**

**- 53” Models: 1036mm horizontal x 584mm vertical.**

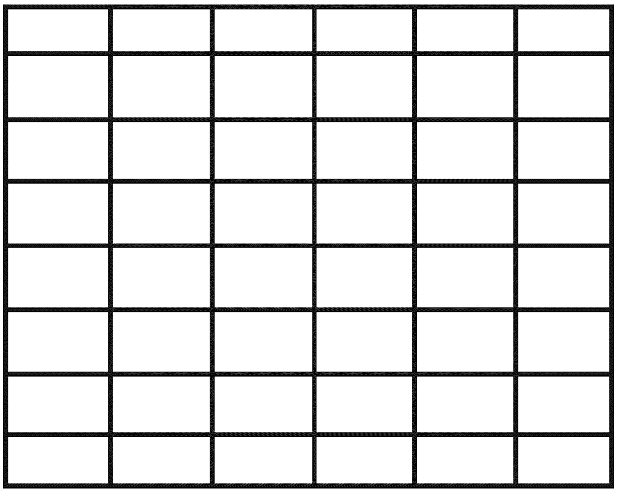
**Grid dimensions:**

| SCREEN | MODE | HORIZONTAL | VERTICAL |
|---|---|---|---|
| 47” | 480i_p | 43.00_mm | 19.50_mm |
| | 480i ZOOM | 43.00_mm | 25.50_mm |
| | 1080i | 40.00_mm | 20.80_mm |
| 53” | 480i_p | 48.70_mm | 22.10_mm |
| | 480i ZOOM | 48.70_mm | 28.80_mm |
| | 1080i | 46.60_mm | 23.10_mm |
| 56” | 480i_p | 51.50_mm | 23.30_mm |
| | 480i ZOOM | 51.47_mm | 30.48_mm |
| | 1080i | 47.90_mm | 24.90_mm |

**NOTE:**

**A convergence alignment template, part number TXFQD01ESER for 47”, TXFQD01FSER for 53” and**

**TXFQD04ESER1 for 56” is available through Matsushita/Panasonic Services**



# 19. Service Mode (electronic controls)

**This receiver has electronic technology using the IC bus concept. It performs as a control function and it replaces many mechanical controls. Instead of adjusting mechanical controls individually, many of the control functions are now performedby using “on screen display menu”. (The service adjustment mode.)**

**NOTE:**
**It is suggested that the technician reads all the way through and understand the following procedure for entering/exiting the service adjustment mode; then proceed with the instructions working with the receiver. When becoming familiarwith the procedure, the flow chart for service mode may be used as a quick guide.**

## 19.1. Quick entry to service mode:

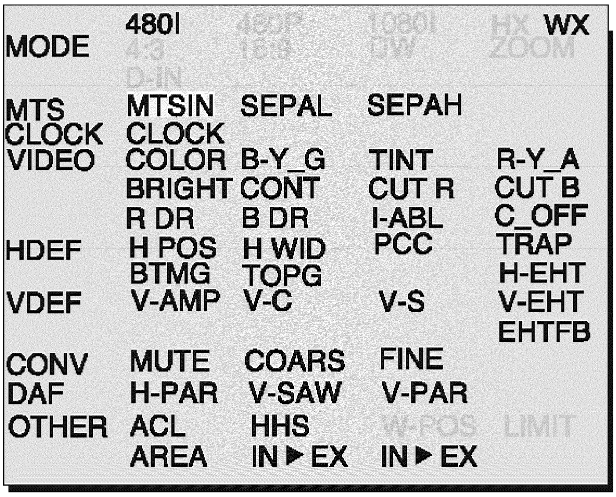
**When minor adjustments need to be done to the electronic controls, the method for entering the service mode without removal of the cabinet back is as follows, using the remote control:**

1. **Select SET-UP icon and select CABLE mode.**
2. **Select TIMER icon and set SLEEP time for 30 Min.**
3. **Press “ACTION” then VOL up to exit menus.**
4. **Tune to the Channel 124.**
5. **Adjust VOLUME to minimum (0).**
6. **Press VOL ← (decrease) on receiver. Red “CHK” appears in upper corner.**

**To toggle between aging and service modes:**
**While the “CHK” is displayed on the left top corner of the CRT, pressing “ACTION” and “VOL” UP on the TV simultaneously will toggle between the modes. Red “CHK” for servicemode and yellow “CHK” for aging.**

7. **Press POWER on the remote control to display the service adjustment modes menu, select adjustment by pressing the VOL right/left buttons and CH up/down buttons on the remote and ACTION to enter the adjustment.**

**Service mode menu**


MODE 480I 480P 1080I HX WX
4:3 16:9 DW ZOOM
D-IN
MTS MTSIN SEPAL SEPAH
CLOCK CLOCK
VIDEO COLOR B-Y_G TINT R-Y_A
BRIGHT CONT CUT R CUT B
R DR B DR I-ABL C_OFF
HDEF H POS H WID PCC TRAP
BTMG TOPG H-EHT
VDEF V-AMP V-C V-S V-EHT
EHTFB
CONV MUTE COARS FINE
DAF H-PAR V-SAW V-PAR
OTHER ACL HHS W-POS LIMIT
AREA IN ▶ EX IN ▶ EX

**NOTE:**
**Some adjustments are available only in some modes (480i, 480p, 1080i); it is needed to apply the format; For some adjustments is required to perform adjustment for each format; convergence adjustment must be performed for 480i-p (same for interlace & progressive),ZOOM 480i and 1080i. A 1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder.**

## 19.2. Exiting the service mode:

**This PTV goes out from service mode when it is unplugged or turned OFF. To exit the service mode, turn the TV OFF or unplug the PTV from AC.**

**Other method**
**Press ACTION and POWER on the receiver simultaneously for at least 2 seconds.The receiver momentarily shuts off; then comes back on tuned to channel 3 with a preset level of sound.Any programmed channels, channels caption data and some others userdefined settings will be erased when exited by pressing ACTION and POWER on receiver.**

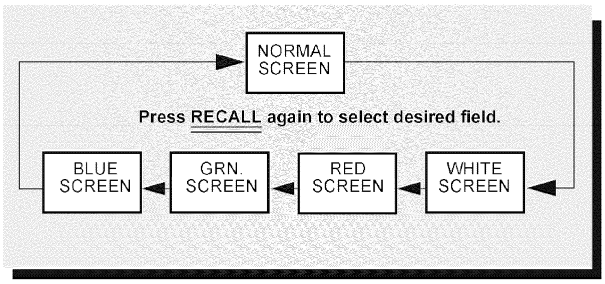
**IMPORTANT NOTE**

**Always check that PTV exits the service mode**

**To check colors:**

**Press RECALL on the remote control when in service mode (red "CHK" is displayed) to enter the purity field check mode.**

**Color check**



Press RECALL again to select desired field.

## 19.3. Service adjustment default values for items

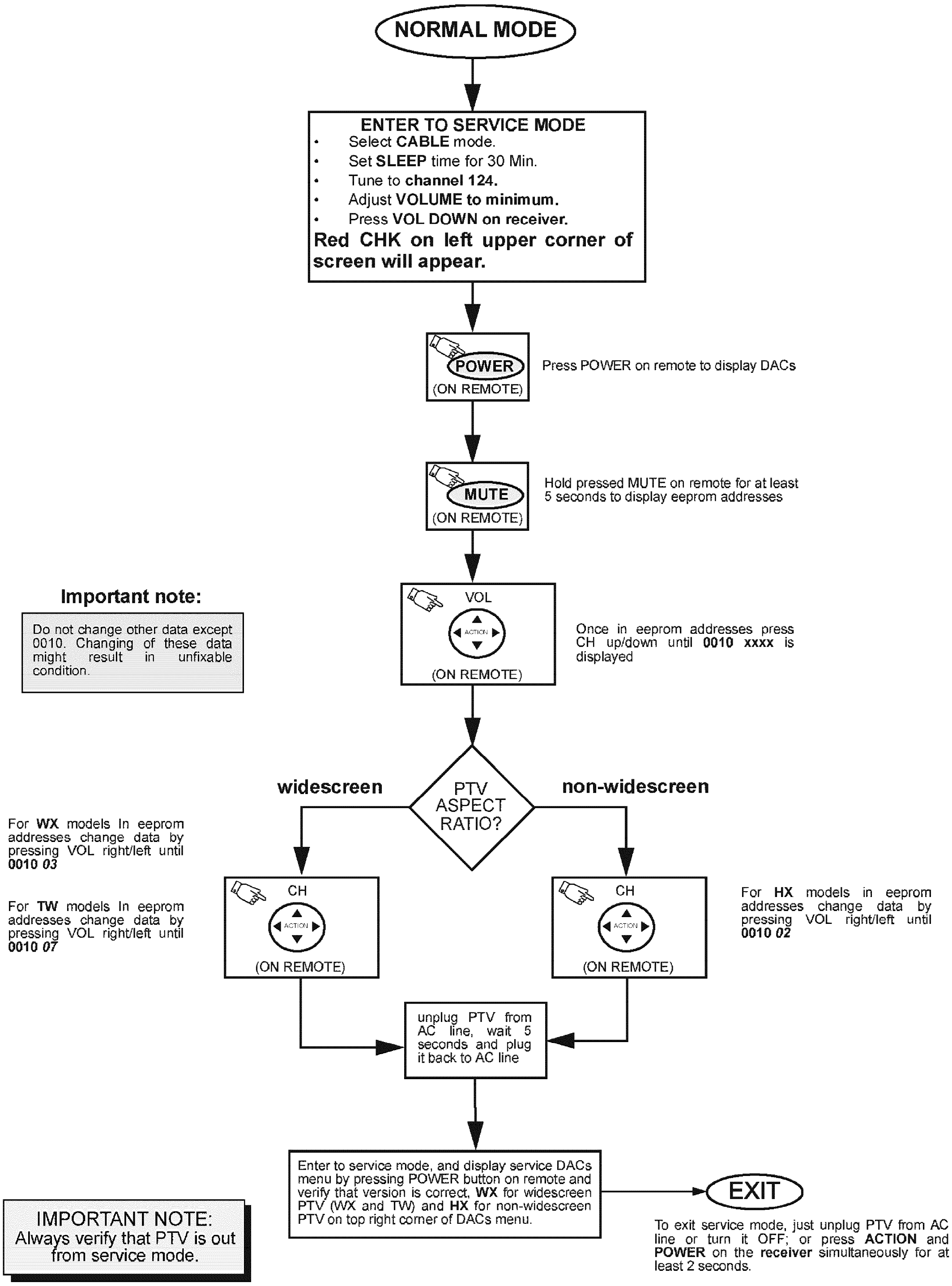
| REGISTER | DESCRIPTION | FORMAT | | |
|---|---|---|---|---|
| | | NTSC | 480i ZOOM | 1080i |
| COLOR | COLOR | 26 | N/A | 18 |
| B_Y-G | MAGENTA TINT ADJ | 38 | N/A | 40 |
| TINT | TINT | 88 | N/A | 86 |
| R_Y-A | YELLOW TINT ADJ | AA | N/A | 9A |
| BRIGH | SUB-BRIGHTNESS | 01 F6 | N/A | 213 |
| CONT | SUB-CONTRAST | 9D | N/A | 92 |
| CUT-R | RED CUT-OFF | 02 00 | N/A | N/A |
| CUT-B | BLUE CUT-OFF | 02 00 | N/A | N/A |
| R DR | RED DRIVE | 80 | N/A | N/A |
| B DR | BLUE DRIVE | 80 | N/A | N/A |
| H-POS | HORIZONTAL POSITIONING | 01 95 | N/A | 47 |
| H-WID | HORIZONTAL WIDTH | 7D | N/A | 70 |
| PCC | PINCUSHION CORRECTION | 40 | 60 | 40 |
| TRAP | TRAPEZOID | 82 | 80 | 82 |
| BTMG | BOTTOM CORNER PINCUSHION | 56 | 50 | 56 |
| TOPG | TOP CORNER PINCUSHION | 56 | 50 | 56 |
| V-AMP | VERTICAL SIZE | 17 | 28 | 28 |
| V-C | VERTICAL LINEARITY | 20 | 20 | 20 |
| V-S | VERTICAL S CORRECTION | 13 | 13 | 13 |
| TEST POS H | | 00 1B | N/A | N/A |
| TEST POS V | | 04 20 | N/A | N/A |
| DATA POS | DATA POSITIONING | 04 26 | N/A | N/A |
| OSD POS H | HORIZONTAL OSD POSITIONING | 73 | 4F | N/A |
| OSD POS V | VERTICAL OSD POSITIONING | 4F | 4F | N/A |
| COLOR DVI | COLOR DVI | 80 | 80 | 80 |
| B_Y-G DVI | MAGENTA TINT ADJ DVI | 75 | 75 | 75 |
| TINT DVI | TINT DVI | 81 | 81 | 81 |
| R_Y-A DVI | YELLOW TINT ADJ DVI | 94 | 94 | 94 |

**NOTE:**
**The above table shows the default values for the service items, this values can change depending on the serviced PTV.**

**Important notice:**

**Since Widescreen 16:9 and non-widescreen 4:3 PTVs use the same light box, for this reason is important to set it to the correct version (16:9 or 4:3). To check this plese see “Instructional flow chart for format aspect switching” inthe following section.**

## 19.4. Instructional flow chart for light-box format aspect switching (WX 16:9, TW 16:9 or HX 4:3)


NORMAL MODE
POWER
(ON REMOTE)
MUTE
(ON REMOTE)
VOL
ACTION
(ON REMOTE)
widescreen
non-widescreen
PTV ASPECT RATIO?
CH
ACTION
(ON REMOTE)
CH
ACTION
(ON REMOTE)
EXIT

**ENTER TO SERVICE MODE**

- Select **CABLE** mode.
- Set **SLEEP** time for 30 Min.
- Tune to **channel 124.**
- Adjust **VOLUME to minimum.**
- Press **VOL DOWN on receiver.**

**Red CHK on left upper corner of screen will appear.**

Press POWER on remote to display DACs

Hold pressed MUTE on remote for at least 5 seconds to display eeprom addresses

**Important note:**

Do not change other data except 0010. Changing of these data might result in unfixable condition.

Once in eeprom addresses press CH up/down until **0010 xxxx** is displayed

For **WX** models In eeprom addresses change data by pressing VOL right/left until **0010** ***03***

For **TW** models In eeprom addresses change data by pressing VOL right/left until **0010** ***07***

For **HX** models in eeprom addresses change data by pressing VOL right/left until **0010** ***02***

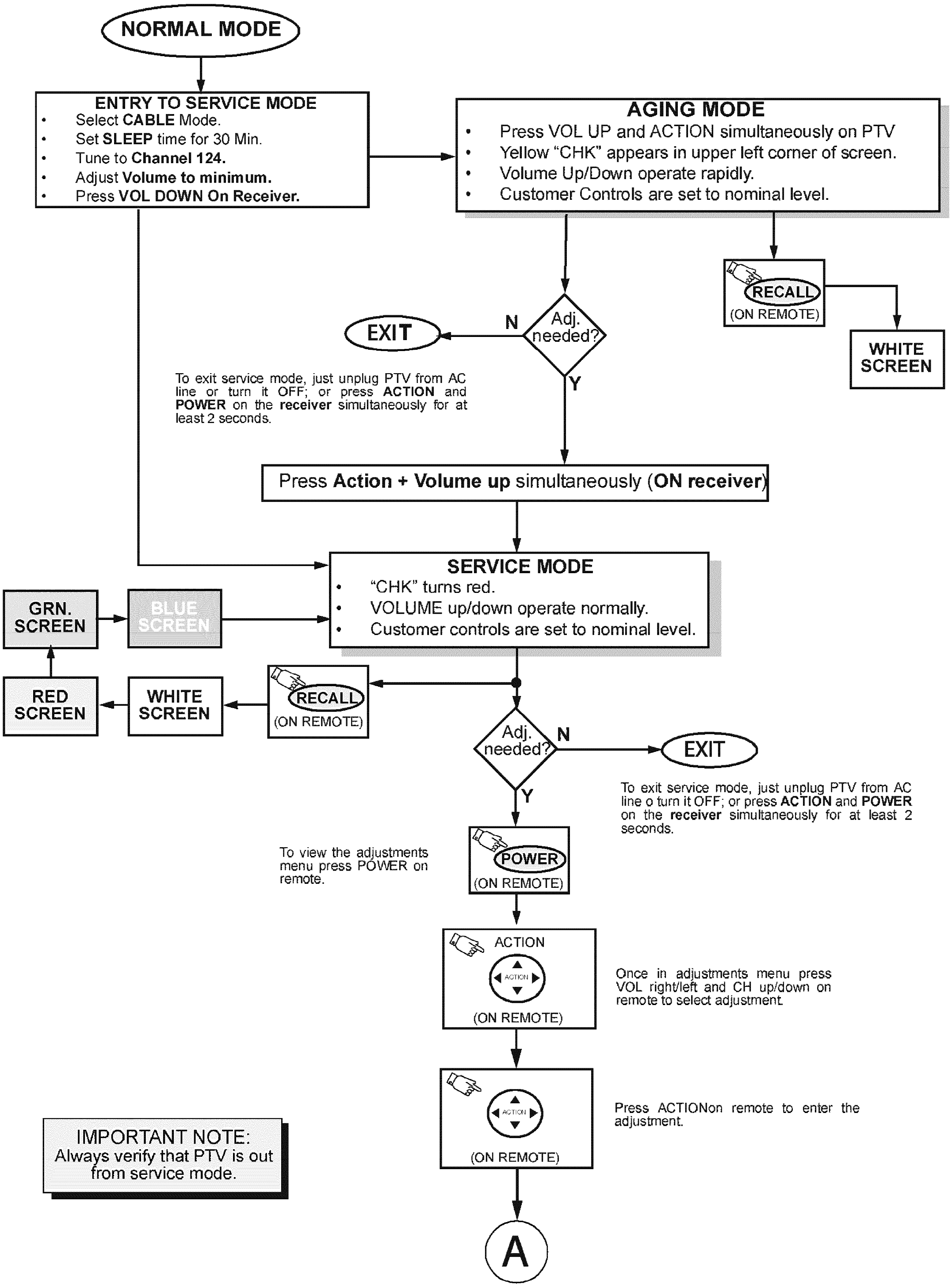
unplug PTV from AC line, wait 5 seconds and plug it back to AC line

Enter to service mode, and display service DACs menu by pressing POWER button on remote and verify that version is correct, **WX** for widescreen PTV (WX and TW) and **HX** for non-widescreen PTV on top right corner of DACs menu.

IMPORTANT NOTE:
Always verify that PTV is out from service mode.

To exit service mode, just unplug PTV from AC line or turn it OFF; or press **ACTION** and **POWER** on the **receiver** simultaneously for at least 2 seconds.

## 19.5. Instructional flow for service mode


NORMAL MODE
EXIT
N
Adj. needed?
Y
RECALL
(ON REMOTE)
WHITE SCREEN
GRN. SCREEN
BLUE SCREEN
RED SCREEN
WHITE SCREEN
RECALL
(ON REMOTE)
Adj. needed?
N
EXIT
Y
POWER
(ON REMOTE)
ACTION
ACTION
(ON REMOTE)
ACTION
(ON REMOTE)
A

**ENTRY TO SERVICE MODE**

- Select **CABLE** Mode.
- Set **SLEEP** time for 30 Min.
- Tune to **Channel 124.**
- Adjust **Volume to minimum.**
- Press **VOL DOWN On Receiver.**

**AGING MODE**

- Press VOL UP and ACTION simultaneously on PTV
- Yellow "CHK" appears in upper left corner of screen.
- Volume Up/Down operate rapidly.
- Customer Controls are set to nominal level.

To exit service mode, just unplug PTV from AC line or turn it OFF; or press **ACTION** and **POWER** on the **receiver** simultaneously for at least 2 seconds.

Press **Action + Volume up** simultaneously (**ON receiver**)

**SERVICE MODE**

- "CHK" turns red.
- VOLUME up/down operate normally.
- Customer controls are set to nominal level.

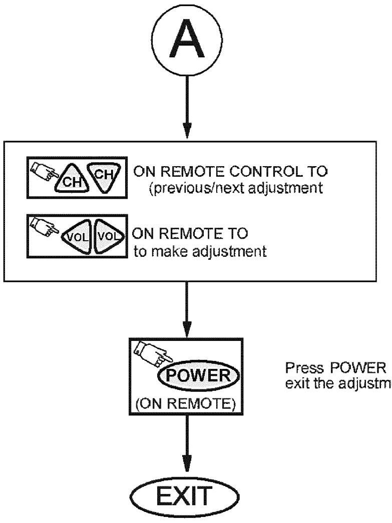
To exit service mode, just unplug PTV from AC line o turn it OFF; or press **ACTION** and **POWER** on the **receiver** simultaneously for at least 2 seconds.

To view the adjustments menu press POWER on remote.

Once in adjustments menu press VOL right/left and CH up/down on remote to select adjustment.

Press ACTIONon remote to enter the adjustment.

IMPORTANT NOTE:
Always verify that PTV is out from service mode.


A
CH
CH
ON REMOTE CONTROL TO
(previous/next adjustment
VOL
VOL
ON REMOTE TO
to make adjustment
POWER
(ON REMOTE)
EXIT

Press POWER or ACTION on remote to exit the adjustment.

IMPORTANT NOTE:
Always verify that PTV is out from service mode.

To exit service mode, just unplug PTV from AC line or turn it OFF; or press **ACTION** and **POWER** on the **receiver** simultaneously for at least 2 seconds.

# 20. Reference of PDF links color

| DESCRIPTION OF PDF LINK COLORS | |
|---|---|
| **TYPE** | **DESTINATION** |
| **SCHEMATIC** | |
| YELLOW ON IC | IC ON PCB |
| YELLOW ON CONNECTOR | CONNECTOR ON PCB |
| YELLOW ON SCHEMATIC | PCB |
| CYAN | WAVEFORM |
| GREEN ON SIDE | SCHEMATIC CONTINUED |
| GREEN ON CONNECTOR | CONNECTOR CONNECTION |
| BLUE ON IC | VOLTAGE |
| **PCB** | |
| BLUE ON IC | IC ON SCHEMATIC |
| BLUE ON CONNECTOR | CONNECTOR ON SCHEMATIC |
| BLUE ON PCB | SCHEMATIC |
| GREEN ON SIDE | PCB CONTINUED |
| **BLOCK DIAGRAMS** | |
| GREEN ON IC | IC ON SCHEMATIC |
| GREEN ON SIDE | BLOCK DIAGRAM CONTINUED |

# 21. Conductor views

### 21.1. A-Board 1 of 2

### 21.2. A-Board 2 of 2

### 21.3. D-Board 1 of 2

### 21.4. D-Board 2 of 2

### 21.5. DG-Board top view 1 of 4

### 21.6. DG-Board top view 2 of 4

### 21.7. DG-Board top view 3 of 4

### 21.8. DG-Board top view 4 of 4

### 21.9. DG-Board bottom view 1 of 4

### 21.10. DG-Board bottom view 2 of 4

### 21.11. DG-Board bottom view 3 of 4

### 21.12. DG-Board bottom view 4 of 4

### 21.13. DV-Board top view 1 of 2

### 21.14. DV-Board top view 2 of 2

### 21.15. DV-Board bottom view 1 of 2

### 21.16. DV-Board bottom view 2 of 2

### 21.17. DC-Board top view 1 of 2

### 21.18. DC-Board top view 2 of 2

### 21.19. DC-Board bottom view 1 of 2

### 21.20. DC-Board bottom view 2 of 2

### 21.21. LR-Board

### 21.22. LG-Board

### 21.23. LB-Board

### 21.24. G, K, R-Board

## 22. Block diagrams

### 22.1. Audio block diagram

## 22.2. Video block diagram

# 23. Schematic diagrams

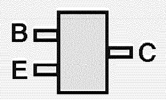
## 23.1. Schematic diagrams notes

# Notes:

## IMPORTANT SAFETY NOTICE

THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES THAT ARE IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS DESIGNATED WITH A ⚠ IN THE SCHEMATIC.

## CHIP TRANSISTOR LEAD DESIGNATION



## SCHEMATIC NOTES

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ● ; Test point but no pin ○.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⊥ indicates COLD GROUND.

*NOTE: All other component symbols are used for engineering design purposes.*

## VOLTAGE MEASUREMENTS

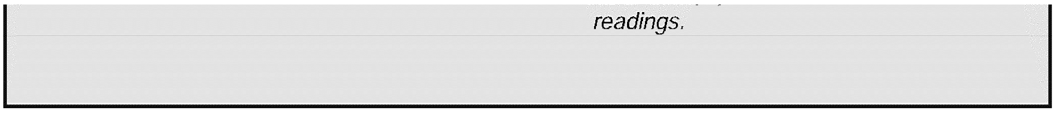
1. Voltage measurement:
   - AC input to the Receiver is 120V. NTSC (HD, 1125i & 525P when applicable) signal generator is connected to the antenna of the Receiver. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min.
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter.
   Incorrect ground connection will result in erroneous readings.

*CAUTION: **Incorrect ground connection of the test equipment will result in erroneous readings.***

## WAVEFORM MEASUREMENTS

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to “MIN”.
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

*CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.*



*readings.*

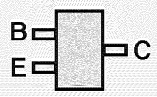
## 23.2. Notas de los diagramas esquematicos

# Notas

## NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

## IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*



## NOTAS DE LOS DIAGRAMAS

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en μH.
4. Los puntos de prueba en la terminal de algún componente son indicados por ⚲ Los puntos de prueba fuera de los componentes se indican con ⚲.
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏧ indica conexión a **Tierra Fría**.

***NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.***

## MEDICIÓN DE VOLTAJES

1. Medición de voltaje:
    - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
    - Los ajustes de los Menus Picture y Audio se normalizan.

      En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.

      El nivel de Volumen se minimiza.

      De los modos TV y Video, seleccionar el modo TV.

      Seleccionar modo Estereo del Audio.
    - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
    - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

***PRECAUCION: SI no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.***

## MEDICIÓN DE FORMAS DE ONDA

1. Un símbolo como 🔍③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.

4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de

*PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.*

## 23.3. A-Board schematic 1 of 4

## 23.4. A-Board schematic 2 of 4

## 23.5. A-Board schematic 3 of 4

## 23.6. A-Board schematic 4 of 4

## 23.7. D-Board schematic 1 of 5

## 23.8. D-Board schematic 2 of 5

## 23.9. D-Board schematic 3 of 5

## 23.10. D-Board schematic 4 of 5

## 23.11. D-Board schematic 5 of 5

## 23.12. DG-Board schematic 1 of 6

## 23.13. DG-Board schematic 2 of 6

## 23.14. DG-Board schematic 3 of 6

## 23.15. DG-Board schematic 4 of 6

## 23.16. DG-Board schematic 5 of 6

## 23.17. DG-Board schematic 6 of 6

## 23.18. DV-Board schematic 1 of 3

## 23.19. DV-Board schematic 2 of 3

## 23.20. DV-Board schematic 3 of 3

## 23.21. DC-Board schematic 1 of 2

## 23.22. DC-Board schematic 2 of 2

## 23.23. LR-Board schematic

## 23.24. LG-Board schematic

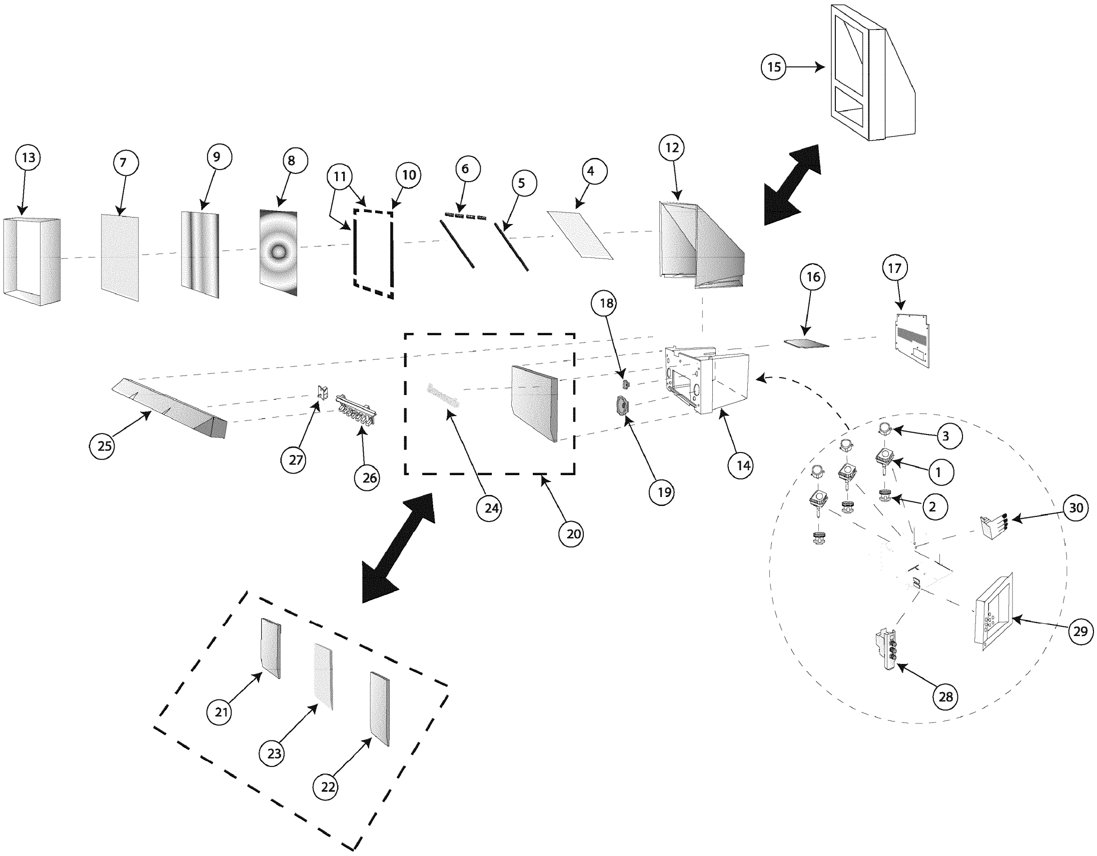
## 23.25. LB-Board schematic

## 23.26. G, K, R-Board schematic

## 23.27. Voltages

## 23.28. Waveforms

# 24. Parts location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# 25. Parts list

## 25.1. Description of abbreviations guide

**Important Safety Notice**

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use manufacturer's specified parts.

### Abbreviation of part name and description

**1. Resistor**
Example :
ERD25TJ104 **C** 100KΩ, **J**, 1/4W
Type Allowance

| Type | Allowance |
|---|---|
| C : Carbon | F : ± 1% |
| F : Fuse | G : ± 2% |
| M : Metal Oxide<br>Metal Film | J : ± 5%<br>K : ± 10% |
| S : Solid | M : ± 20% |
| W : Wire Wound | |

**2. Capacitor**
Example :
ECKF1H103ZF **C** 0.01μF, **Z**, 50V
Type Allowance

| Type | Allowance |
|---|---|
| C : Carbon | C : ± 0.25pF |
| E : Electrolytic | D : ± 0.5pF |
| P : Polyester<br>Polypropylene | F : ± 1pF<br>G : ± 3% |
| T : Tantalum | J : ± 5% |
| | K : ± 10% |
| | L : ± 15% |
| | M : ± 20% |
| | P : ± 100%, -0% |
| | Z : ± 80%, -20% |

# 25.2. Parts list

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | **CAPACITORS** | |
| **C002** | **TCJ2VC1H220J** | **CAP C 22PF-J-50V** | |
| **C003** | **TCJ2VC1H220J** | **CAP C 22PF-J-50V** | |
| **C004** | **F2A1H4R7A162** | **CAP E 4.7UF-50V** | |
| **C005** | **F2A1H2R2A162** | **CAP E 2.2UF-50V** | |
| **C006** | **ECA0JM332E** | **CAP E 3300UF-6.3V** | |
| **C008** | **F2A1H4R7A162** | **CAP E 4.7UF-50V** | |
| **C009** | **TCJ2VC1H220J** | **CAP C 22PF-J-50V** | |
| **C010** | **TCJ2VC1H220J** | **CAP C 22PF-J-50V** | |
| **C011** | **TCJ2VF1H104Z** | **CAP C .1UF-Z-50V** | |
| **C012** | **TCJ2VF1H104Z** | **CAP C .1UF-Z-50V** | |
| **C013** | **ECA0JM332E** | **CAP E 3300UF-6.3V** | |
| **C014** | **F2A1H2R2A162** | **CAP E 2.2UF-50V** | |
| **C017** | **TCJ2VF1H104Z** | **CAP C .1UF-Z-50V** | |
| **C018** | **TCJ2VF1H104Z** | **CAP C .1UF-Z-50V** | |
| **C021** | **F2A1HR22A162** | **CAP E .22UF-50V** | |
| **C022** | **F2A1HR22A162** | **CAP E .22UF-50V** | |
| **C033** | **ECJ2VF1C105Z** | **CAP C 1.0UF-Z-16V** | |
| **C051** | **EEUFC1E470B** | **CAP E 47UF-25V** | |
| **C052** | **ECKR1H103ZF5** | **CAP C .01UF-Z-50V** | |
| **C301** | **F2A2E100A025** | **CAP E 10UF-250V** | |
| **C302** | **ECCR1H221JC5** | **CAP C 220PF-J-50V** | |
| **C304** | **ECKW2H103PU8** | **CAP C .01UF-P-500V** | |
| **C305** | **F2A1H470A162** | **CAP E 47UF-50V** | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C306 | F2A2E100A025 | CAP E 10UF-250V | |
| C307 | ECKR1H103ZF5 | CAP C .01UF-Z-50V | |
| C312 | ECKC3D102KBN | CAP C 1000PF-K-2KV | |
| C313 | ECKR2H102KB5 | CAP C 1000PF-K-500V | |
| C331 | F2A1H470A162 | CAP E 47UF-50V | |
| C332 | ECKR1H103ZF5 | CAP C .01UF-Z-50V | |
| C333 | F2A1H470A162 | CAP E 47UF-50V | |
| C334 | F2A2E470A026 | CAP E 47UF-250V | |
| C335 | ECCR1H221JC5 | CAP C 220PF-J-50V | |
| C336 | F2A1H470A162 | CAP E 47UF-50V | |
| C337 | F2A2E470A026 | CAP E 47UF-250V | |
| C339 | ECKW2H103PU8 | CAP C .01UF-P-500V | |
| C340 | ECKR1H103ZF5 | CAP C .01UF-Z-50V | |
| C341 | F2A2E100A025 | CAP E 10UF-250V | |
| C345 | ECKC3D102KBN | CAP C 1000PF-K-2KV | |
| C346 | ECKR2H102KB5 | CAP C 1000PF-K-500V | |
| C361 | F2A1C101A159 | CAP E 100UF-16V | |
| C362 | ECCR1H221JC5 | CAP C 220PF-J-50V | |
| C364 | ECKW2H103PU8 | CAP C .01UF-P-500V | |
| C365 | F2A2E100A025 | CAP E 10UF-250V | |
| C366 | F2A1H470A162 | CAP E 47UF-50V | |
| C367 | ECKR1H103ZF5 | CAP C .01UF-Z-50V | |
| C372 | ECKC3D102KBN | CAP C 1000PF-K-2KV | |
| C373 | ECKR2H102KB5 | CAP C 1000PF-K-500V | |
| C374 | F2A1C101A159 | CAP E 100UF-16V | |
| C405 | ECA1EHG102E | CAP E 1000UF-25V | |
| C406 | ECA1EHG102E | CAP E 1000UF-25V | |
| C407 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C408 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C411 | TCJ2VB1H822K | CAP C 8200PF-K-50V | |
| C412 | ECQB1224KF3 | CAP P .22UF-K-100V | |
| C413 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C414 | TCJ2VB1H272K | CAP C 2700PF-K-50V | |
| C417 | TCJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C418 | TCJ2VF1H223Z | CAP C .022UF-Z-50V | |
| C421 | ECA1CEN100B | CAP E 10UF-16V | |
| C458 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C461 | ECA1HHG221B | CAP E 220UF-50V | |
| C501 | ECA1EM101B | CAP E 100UF-25V | |
| C502 | ECQV1H105JL3 | CAP P 1.0UF-J-50V | |
| C503 | ECKR2H102KB5 | CAP C 1000PF-K-500V | |
| C509 | ECWF2474JSR | CAP P .47UF-J-200V | |
| C510 | TCJ2VC1H221J | CAP C 220PF-J-50V | |
| C511 | ECWH20222JVY | CAP P 2200PF-J-2KV | ⚠ |
| C512 | ECWH20102JVY | CAP P 1000PF-J-2KV | ⚠ |
| C513 | ECQF4103JZH | CAP P .01UF-J-400V | ⚠ |
| C514 | ECWH20222JVY | CAP P 2200PF-J-2KV | ⚠ |
| C518 | ECKW3D221JBP | CAP C 220PF-J-2KVDC | ⚠ |
| C519 | ECKW3D221JBP | CAP C 220PF-J-2KVDC | ⚠ |
| C520 | ECQB1H103JF3 | CAP P .01UF-J-50V | ⚠ |
| C522 | ECWH20182JVY | CAP P 1800PF-J-2KV | ⚠ |
| C523 | ECWH20182JVY | CAP P 1800PF-J-2KV | ⚠ |
| C524 | ECQB1224JF3 | CAP P .22UF-J-100V | |
| C525 | ECEA1HN220UB | CAP E 22UF/50V | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C526 | F2A2E101A026 | CAP E 100UF-250V | |
| C527 | ECKR2H102KB5 | CAP C 1000PF-K-500V | |
| C528 | F2A1H470A162 | CAP E 47UF-50V | ⚠ |
| C531 | ECA160V33UE | CAP E 33UF/160V | |
| C533 | ECKR2H101KB5 | CAP C 100UF-K-500V | |
| C535 | ECA1EM471E | CAP E 470UF-25V | |
| C601 | EEUFC1C331B | CAP E 330UF-16V | |
| C602 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C701 | F2A1C101A159 | CAP E 100UF-16V | |
| C702 | ECKR3D271KBP | CAP C 270PF-K-2KV | |
| C703 | ECQM2104KZW | CAP P .1UF-K-200V | |
| C704 | ECKR2H391KB5 | CAP C 390PF-K-500V | |
| C707 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C708 | ECQE1685KFB | CAP P 6.8UF-K-100V | |
| C801 | ECQU2A104MNB | CAP P .10UF-M-250VAC | ⚠ |
| C802 | ECQU2A823MNB | CAP P .082UF-M-250VAC | ⚠ |
| C803 | ECKCNA222ME7 | CAP C 2200PF-M-125V | ⚠ |
| C804 | ECKCNA222ME7 | CAP C 2200PF-M-125V | ⚠ |
| C805 | ECKR2H472PU7 | CAP C 4700PF-P-500V | ⚠ |
| C806 | ECKR2H472PU7 | CAP C 4700PF-P-500V | ⚠ |
| C807 | ECKR2H472PU7 | CAP C 4700PF-P-500V | ⚠ |
| C808 | ECA1EM101B | CAP E 100UF-25V | |
| C809 | TCJ2VB1E223K | CAP C .022UF-K-25V | |
| C810 | EETED2D102C | CAP E 1000PF-200V | ⚠ |
| C812 | ECA1EHG471B | CAP E 470UF-25V | |
| C814 | ECKW3D102KBP | CAP C 1000PF-K-2KV | |
| C815 | ECQB1H152JF3 | CAP P 1500PF-J-50V | |
| C816 | ECKW3D821KBP | CAP C 820PF-K-2KV | |
| C817 | ECKW3D102KBP | CAP C 1000PF-K-2KV | |
| C819 | ECQB1H102JF3 | CAP P 1000PF-J-50V | |
| C820 | ECQV1H334JL3 | CAP P .33UF-J-50V | |
| C821 | ECQB1H272KF3 | CAP P 2700PF-K-50V | |
| C822 | F2A1H220A162 | CAP E 22UF-50V | |
| C823 | TCJ2VC1H151J | CAP C 150PF-J-50V | |
| C824 | EEUFC1V151B | CAP E 150UF-35V | |
| C825 | ECKCNA102MBB | CAP C .001UF-M-125V | ⚠ |
| C826 | TCJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C830 | EETHC2C471B | CAP E 470PF-160V | ⚠ |
| C831 | ECKR3D821KBP | CAP C 820PF-K-2KV | |
| C832 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C834 | EEUFC1V222E | CAP E 2200UF-35V | |
| C836 | ECKR3A331KBP | CAP C 330PF-K-1KVDC | |
| C837 | F2A1E472A135 | CAP E 4700UF-25V | |
| C839 | ECKR3A331KBP | CAP C 330PF-K-1KVDC | |
| C841 | F2A1E472A135 | CAP E 4700UF-25V | |
| C842 | ECKR3A331KBP | CAP C 330PF-K-1KVDC | |
| C843 | ECA1VM222B | CAP E 2200UF-35V | |
| C844 | ECKR3A331KBP | CAP C 330PF-K-1KVDC | |
| C845 | ECA1VM222B | CAP E 2200UF-35V | |
| C846 | ECKR3A331KBP | CAP C 330PF-K-1KVDC | |
| C848 | F2A1C101A159 | CAP E 100UF-16V | |
| C849 | ECKR1H223ZF5 | CAP C .022UF-Z-50V | |
| C851 | ECQV1H104JL3 | CAP P .10UF-J-50V | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C852 | ECA1EM101B | CAP E 100UF-25V | |
| C854 | F2A1C101A159 | CAP E 100UF-16V | |
| C855 | ECJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C876 | ECJ3VF1H224Z | CAP C .22UF-Z-50V | |
| C877 | ECA0JM221B | CAP E 220UF-6.3V | |
| C878 | EEUFC1V561B | CAP E 560UF-35V | |
| C879 | EEUFC1C471LB | CAP E 470UF-16V | |
| C880 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C881 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C882 | ECA0JM221B | CAP E 220UF-6.3V | |
| C883 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C885 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C886 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C887 | EEUFC1V561B | CAP E 560UF-35V | |
| C888 | EEUFC1V561B | CAP E 560UF-35V | |
| C889 | ECJ2YF1E474Z | CAP C .47UF-Z-25V | |
| C890 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C891 | EEUFC1C471LB | CAP E 470UF-16V | |
| C892 | F2A1C221A159 | CAP E 220UF-16V | |
| C893 | EEUFC1C471LB | CAP E 470UF-16V | |
| C895 | ECJ3VF1H224Z | CAP C .22UF-Z-50V | |
| C896 | ECJ3VF1H224Z | CAP C .22UF-Z-50V | |
| C897 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C902 | ECQM2103KZ3 | CAP P .01UF-K-200V | |
| C903 | ECKR1H103ZF5 | CAP C .01UF-Z-50V | |
| C904 | ECKR1H103ZF5 | CAP C .01UF-Z-50V | |
| C906 | ECQM2103KZ3 | CAP P .01UF-K-200V | |
| C907 | F2A2C100A023 | CAP E 10UF-160V | |
| C908 | F2A1C101A159 | CAP E 100UF-16V | |
| C909 | F2A1C101A159 | CAP E 100UF-16V | |
| C910 | F2A2C100A023 | CAP E 10UF-160V | |
| C912 | F2A1H220A162 | CAP E 22UF-50V | |
| C931 | F2A1H101A162 | CAP E 100UF-50V | |
| C932 | TCJ2VB1H103K | CAP C .01UF-K-50V | |
| C933 | F2A1C101A159 | CAP E 100UF-16V | |
| C934 | ECA1CM100B | CAP E 10UF-16V | |
| C935 | TCJ2VB1H102K | CAP C 1000PF-K-50V | |
| C936 | TCJ2VB1H103K | CAP C .01UF-K-50V | |
| C939 | ECKR1H103ZF5 | CAP C .01UF-Z-50V | |
| C940 | ECQM2103KZ3 | CAP P .01UF-K-200V | |
| C941 | ECKR1H103ZF5 | CAP C .01UF-Z-50V | |
| C942 | ECQM2103KZ3 | CAP P .01UF-K-200V | |
| C943 | F2A2C100A023 | CAP E 10UF-160V | |
| C944 | F2A1C101A159 | CAP E 100UF-16V | |
| C945 | F2A1C101A159 | CAP E 100UF-16V | |
| C947 | F2A2C100A023 | CAP E 10UF-160V | |
| C962 | ECKR1H103ZF5 | CAP C .01UF-Z-50V | |
| C963 | ECQM2103KZ3 | CAP P .01UF-K-200V | |
| C965 | ECKR1H103ZF5 | CAP C .01UF-Z-50V | |
| C966 | ECQM2103KZ3 | CAP P .01UF-K-200V | |
| C967 | F2A2C100A023 | CAP E 10UF-160V | |
| C968 | F2A1C101A159 | CAP E 100UF-16V | |
| C969 | F2A1C101A159 | CAP E 100UF-16V | |
| C970 | F2A2C100A023 | CAP E 10UF-160V | |
| C972 | F2A1H220A162 | CAP E 22UF-50V | |
| C1101 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C1102 | TCJ2VF1H104Z | CAP C .1UF-Z-50V | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C1103 | TCJ2VB1C104K | CAP C .1UF-K-16V | |
| C1105 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C1112 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C1113 | ECEA1CKA101B | CAP E 100UF-16V | |
| C1502 | ECQE6104KFB | CAP P 100UF-K-100V | |
| C1503 | ECQE6104KFB | CAP P 100UF-K-100V | |
| C1504 | ECJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C1505 | F2A1C101A159 | CAP E 100UF-16V | |
| C1506 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C1508 | F2A1C101A159 | CAP E 100UF-16V | |
| C1509 | ECEA1HKA010B | CAP E 1UF-50V | |
| C1510 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C1511 | TCJ2VC1H471J | CAP C 470PF-J-50V | |
| C1513 | ECEA1EN101UB | CAP E 100UF-25V | |
| C1514 | F2A1C101A159 | CAP E 100UF-16V | |
| C2202 | F2A1H2R2A162 | CAP E 2.2UF-50V | |
| C2203 | F2A1H4R7A162 | CAP E 4.7UF-50V | |
| C2204 | ECSF1CE106VB | CAP T 10.6UF-16V | |
| C2205 | F2A1H1R0A162 | CAP E 1.0UF-50V | |
| C2206 | ECQB1H223JF3 | CAP P .022UF-J-50V | |
| C2207 | ECSF1CE335VB | CAP T 3.3UF-16V | |
| C2208 | TCJ2VB1C104K | CAP C .1UF-K-16V | |
| C2209 | TCJ2VB1C104K | CAP C .1UF-K-16V | |
| C2210 | TCJ2VB1C104K | CAP C .1UF-K-16V | |
| C2211 | F2A1H100A162 | CAP E 10UF-50V | |
| C2212 | ECQB1H473JF3 | CAP P .047UF-J-50V | |
| C2213 | TCJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C2214 | TCJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C2215 | F2A1C101A159 | CAP E 100UF-16V | |
| C2218 | F2A1HR47A162 | CAP E .47UF-50V | |
| C2303 | ECA1EM101B | CAP E 100UF-25V | |
| C2304 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C2330 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2331 | F2A1H100A162 | CAP E 10UF-50V | |
| C2332 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2333 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2334 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C2335 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2337 | ECA50YT2R2KB | CAP E 2.2UF-50V | |
| C2338 | ECA50YT2R2KB | CAP E 2.2UF-50V | |
| C2342 | TCJ2VB1H333K | CAP C .033UF-K-50V | |
| C2343 | ECEA1CN100UB | CAP E 10UF-16V | |
| C2344 | ECQB1H224JF3 | CAP P .22UF-J-50V | |
| C2345 | EEUFC1E222E | CAP E 2200UF-25V | |
| C2346 | TCJ2VB1H561K | CAP C 560PF-K-50V | |
| C2347 | ECJ3VB1H104K | CAP C .1UF-K-50V | |
| C2348 | F2A1H100A162 | CAP E 10UF-50V | |
| C2349 | ECEA1CN100UB | CAP E 10UF-16V | |
| C2351 | F1J1C225A083 | CAP C 2.2UF-Z-16V | |
| C2352 | EEUFC1E222E | CAP E 2200UF-25V | |
| C2354 | TCJ2VB1H471K | CAP C 470PF-K-50V | |
| C2355 | TCJ2VC1H270J | CAP C 27PF-J-50V | |
| C2356 | TCJ2VB1H471K | CAP C 470PF-K-50V | |
| C2357 | TCJ2VB1H331K | CAP C 330PF-K-50V | |
| C2358 | ECJ3VB1H104K | CAP C .1UF-K-50V | |
| C2359 | TCJ2VB1H331K | CAP C 330PF-K-50V | |
| C2360 | ECJ3VB1H104K | CAP C .1UF-K-50V | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C2361 | TCJ2VB1H471K | CAP C 470PF-K-50V | |
| C2362 | TCJ2VB1H471K | CAP C 470PF-K-50V | |
| C2363 | TCJ2VB1H682K | CAP C 6800PF-K-50V | |
| C2364 | ECJ3VB1H104K | CAP C .1UF-K-50V | |
| C2365 | ECJ3VB1H104K | CAP C .1UF-K-50V | |
| C2367 | ECQB1H224JF3 | CAP P .22UF-J-50V | |
| C2368 | TCJ2VB1H333K | CAP C .033UF-K-50V | |
| C2369 | TCJ2VB1H561K | CAP C 560PF-K-50V | |
| C2370 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2371 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2373 | TCJ2VB1H682K | CAP C 6800PF-K-50V | |
| C2374 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2375 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2451 | ECEA1HN4R7UB | CAP E 4.7UF-50V | |
| C2452 | ECEA1HN4R7UB | CAP E 4.7UF-50V | |
| C2453 | TCJ2VB1H332K | CAP C .0033UF-K-50V | |
| C2454 | TCJ2VB1H332K | CAP C .0033UF-K-50V | |
| C2455 | TCJ2VB1H333K | CAP C .033UF-K-50V | |
| C2456 | TCJ2VB1H333K | CAP C .033UF-K-50V | |
| C2457 | TCJ2VB1H222K | | |
| C2458 | TCJ2VB1H222K | | |
| C2459 | TCJ2VB1C224K | | |
| C2460 | TCJ2VB1C224K | | |
| C2461 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2462 | TCJ2VB1C104K | CAP C .1UF-K-16V | |
| C2463 | TCJ2VB1C104K | CAP C .1UF-K-16V | |
| C2464 | F2A1H4R7A162 | CAP E 4.7UF-50V | |
| C2465 | F2A1H4R7A162 | CAP E 4.7UF-50V | |
| C2466 | F2A1H4R7A162 | CAP E 4.7UF-50V | |
| C2467 | F2A1H4R7A162 | CAP E 4.7UF-50V | |
| C2468 | F2A1H4R7A162 | CAP E 4.7UF-50V | |
| C2474 | F2A1C101A159 | CAP E 100UF-16V | |
| C2475 | TCJ2VB1H103K | CAP C .01UF-K-50V | |
| C2507 | F2A1C101A159 | CAP E 100UF-16V | |
| C2513 | TCJ2VB1C104K | CAP C .1UF-K-16V | |
| C2518 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3001 | F2A1C101A159 | CAP E 100UF-16V | |
| C3002 | ECA1CM470B | CAP E 47UF/16V | |
| C3009 | ECEA1CKA101B | CAP E 100UF-16V | |
| C3011 | ECEA1CN100UB | CAP E 10UF-16V | |
| C3012 | ECEA1CN100UB | CAP E 10UF-16V | |
| C3013 | ECEA1CN100UB | CAP E 10UF-16V | |
| C3014 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3015 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3016 | ECEA1CN100UB | CAP E 10UF-16V | |
| C3017 | ECEA1CN100UB | CAP E 10UF-16V | |
| C3018 | ECEA1CN100UB | CAP E 10UF-16V | |
| C3019 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3020 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3021 | F2A1C471A159 | CAP E 470UF-16V | |
| C3022 | TCJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C3023 | TCJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C3028 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3030 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3031 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3032 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3033 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C3034 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3035 | F2A1C101A159 | CAP E 100UF-16V | |
| C3036 | F2A1C101A159 | CAP E 100UF-16V | |
| C3037 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3038 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3039 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3040 | ECJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C3043 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3044 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3045 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3046 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3047 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3048 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3049 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3050 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3051 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3052 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3053 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3054 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3055 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3056 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3057 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3058 | TCJ2VB1H103K | CAP C .01UF-K-50V | |
| C3059 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3060 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3062 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3064 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3065 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3066 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3067 | ECEA1CKA101B | CAP E 100UF-16V | |
| C3068 | ECEA1CKA101B | CAP E 100UF-16V | |
| C3069 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3071 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3072 | TCJ2VB1H102K | CAP C 1000PF-K-50V | |
| C3081 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C3082 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C3083 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C3084 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C3085 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C3086 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C3087 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C3088 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C3089 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C3090 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C3091 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C3092 | TCJ2VB1H152K | CAP C 1500PF-K-50V | |
| C3093 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3094 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3095 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3097 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3098 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3099 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3100 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3101 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3102 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3103 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3105 | TCJ2VB1H102K | CAP C 1000PF-K-50V | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C3106 | TCJ2VB1H102K | CAP C 1000PF-K-50V | |
| C3109 | TCJ2VB1H102K | CAP C 1000PF-K-50V | |
| C3110 | TCJ2VB1H102K | CAP C 1000PF-K-50V | |
| C3111 | TCJ2VB1H102K | CAP C 1000PF-K-50V | |
| C3112 | ECJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C3113 | ECJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C3114 | ECJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C3119 | ECEA1CKA100B | CAP E 10UF-16V | |
| C4335 | ECJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C7001 | ECJ3YF1E225Z | CAP C 2.2UF-Z-25 | |
| C7002 | ECJ3YF1E225Z | CAP C 2.2UF-Z-25V | |
| C7004 | ECA1EHG221B | CAP E 220UF-25V | |
| C7006 | ECA1EHG221B | CAP E 220UF-25V | |
| C7015 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C7016 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C7017 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C7018 | TCJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C7032 | TCJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C7033 | TCJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C7034 | TCJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C7035 | TCJ2VF1H104Z | CAP C .1UF-Z-50V | |
| C7060 | ECA1CHG101B | CAP E 100UF-16V | |
| C7061 | ECA1CHG101B | CAP E 100UF-16V | |
| C7150 | F2A1V470A127 | CAP E 47UF-35V | |
| C7165 | F2A1V470A127 | CAP E 47UF-35V | |
| | | DIODES | |
| D002 | MAZ31500ML | DIODE ZENER | |
| D003 | MAZ31500ML | DIODE ZENER | |
| D004 | MAZ31500ML | DIODE ZENER | |
| D005 | MAZ31500ML | DIODE ZENER | |
| D081 | LN21RCPHL | DIODE LED | |
| D082 | MAZ40560MF | DIODE ZENER | |
| D083 | MAZ40560MF | DIODE ZENER | |
| D301 | MA2C16700E | DIODE | |
| D302 | MAZ41000LF | DIODE ZENER | |
| D303 | TVSRM1V1 | DIODE | |
| D304 | MA2C165001VT | DIODE | |
| D306 | MA2C165001VT | DIODE | |
| D307 | MA2C165001VT | DIODE | |
| D312 | MA2C18800E | DIODE | |
| D313 | MA2C18800E | DIODE | |
| D314 | MA2C18800E | DIODE | |
| D315 | MA2C18800E | DIODE | |
| D331 | MA2C165001VT | DIODE | |
| D334 | MA2C165001VT | DIODE | |
| D335 | MA2C165001VT | DIODE | |
| D339 | MA2C18800E | DIODE | |
| D340 | MA2C18800E | DIODE | |
| D341 | MA2C18800E | DIODE | |
| D342 | MA2C18800E | DIODE | |
| D361 | MA2C165001VT | DIODE | |
| D363 | MA2C165001VT | DIODE | |
| D364 | MA2C165001VT | DIODE | |
| D369 | MA2C18800E | DIODE | |
| D370 | MA2C18800E | DIODE | |
| D371 | MA2C18800E | DIODE | |
| D372 | MA2C18800E | DIODE | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D407 | MA3X152K0L | DIODE | |
| D409 | MA3X152K0L | DIODE | |
| D410 | MA3X152K0L | DIODE | |
| D411 | MA3X152K0L | DIODE | |
| D451 | B0EAKC000003 | DIODE RECTIFIER | |
| D452 | B0EAKC000003 | DIODE RECTIFIER | |
| D453 | B0EAKC000003 | DIODE RECTIFIER | |
| D454 | B0EAKC000003 | DIODE RECTIFIER | |
| D455 | B0EAKC000003 | DIODE RECTIFIER | |
| D456 | B0EAKC000003 | DIODE RECTIFIER | |
| D458 | B0EAKL000008 | DIODE RECTIFIER | |
| D465 | MAZ40390MF | DIODE ZENER | |
| D466 | MA3X152K0L | DIODE | |
| D501 | D1NL40V70 | DIODE | |
| D502 | MAZ31500ML | DIODE ZENER | |
| D503 | B0HBRV000001 | DIODE | |
| D504 | MAZ42700MF | DIODE ZENER | |
| D509 | MA2C165001VT | DIODE | |
| D510 | MAZ40680LF | DIODE ZENER | |
| D511 | B0HAHP000014 | DIODE | |
| D512 | D1NL40V70 | DIODE | ⚠ |
| D513 | MA2C165001VT | DIODE | |
| D515 | D1NL40V70 | DIODE | |
| D516 | EU2YXV0 | DIODE | |
| D519 | AU02ZV0 | DIODE | |
| D520 | MA3X152K0L | DIODE | |
| D634 | MA2C165001VT | DIODE | |
| D650 | MAZ41100MF | DIODE ZENER | |
| D651 | MAZ41100MF | DIODE ZENER | |
| D656 | MAZ41100MF | DIODE ZENER | |
| D657 | MAZ41100MF | DIODE ZENER | |
| D659 | MAZ41100MF | DIODE ZENER | |
| D660 | MAZ41100MF | DIODE ZENER | |
| D662 | MAZ41100MF | DIODE ZENER | |
| D663 | MAZ41100MF | DIODE ZENER | |
| D702 | D1NL40V70 | DIODE | |
| D801 | D3SB80-4101 | DIODE | ⚠ |
| D802 | D4EAB3610002 | DIODE | ⚠ |
| D815 | MA2C165001VT | DIODE | |
| D816 | MA2C70000F | DIODE | |
| D817 | AU01ZV0 | DIODE | |
| D818 | MAZ32700LL | DIODE ZENER | |
| D819 | B0BA01000046 | DIODE ZENER | ⚠ |
| D822 | B0AAGM000006 | DIODE SWITCHING | |
| D825 | SF5L60U-4000 | DIODE | ⚠ |
| D827 | SF5LC30-4115 | DIODE | |
| D828 | SF5LC30-4115 | DIODE | |
| D829 | SF5LC30-4115 | DIODE | |
| D830 | RL4ZLF-J6 | DIODE | |
| D831 | RL4ZLF-J6 | DIODE | |
| D835 | B0JAME000052 | DIODE | |
| D837 | MA3X152K0L | DIODE | |
| D870 | B0JCME000025 | DIODE | |
| D871 | B0JCME000025 | DIODE | |
| D876 | B0JCME000025 | DIODE | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D885 | MA2062-BTP | DIODE | |
| D886 | MA2120-ATP | DIODE | |
| D887 | MA2062-BTP | DIODE | |
| D895 | MA2C165001VT | DIODE | |
| D902 | MA2C18800E | DIODE | |
| D933 | MA2C18800E | DIODE | |
| D953 | B0ZAZ0000047 | DIODE | |
| D962 | MA2C18800E | DIODE | |
| D973 | B0ZAZ0000047 | DIODE | |
| D983 | B0ZAZ0000047 | DIODE | |
| D1002 | MA3X152K0L | DIODE | |
| D1502 | B0HACW000001 | DIODE | |
| D1503 | MAZ30300LL | DIODE ZENER | ⚠ |
| D1504 | B0HACW000001 | DIODE | |
| D1505 | MA2C0290BF | DIODE | |
| D1506 | MAZ30510HL | DIODE | ⚠ |
| D1507 | MAZ30300LL | DIODE ZENER | |
| D1510 | MAZ30330LL | DIODE ZENER | |
| D1599 | MA3X152K0L | DIODE | |
| D2321 | MA3X152K0L | DIODE | |
| D2323 | MA3X152K0L | DIODE | |
| D2324 | MA3X152K0L | DIODE | |
| D3001 | MAZ31100ML | DIODE ZENER | |
| D3002 | MAZ31100ML | DIODE ZENER | |
| D3003 | MAZ31100ML | DIODE ZENER | |
| D3004 | MAZ31100ML | DIODE ZENER | |
| D3005 | MAZ31100ML | DIODE ZENER | |
| D3006 | MAZ31100ML | DIODE ZENER | |
| D3007 | MAZ31100ML | DIODE ZENER | |
| D3008 | MAZ31100ML | DIODE ZENER | |
| D3009 | MAZ31100ML | DIODE ZENER | |
| D3010 | MAZ31100ML | DIODE ZENER | |
| D3011 | MAZ31100ML | DIODE ZENER | |
| D3012 | MAZ31100ML | DIODE ZENER | |
| D3013 | MAZ31100ML | DIODE ZENER | |
| D3014 | MAZ31100ML | DIODE ZENER | |
| D3015 | MAZ31100ML | DIODE ZENER | |
| D3016 | MAZ31100ML | DIODE ZENER | |
| D3017 | MAZ31100ML | DIODE ZENER | |
| D3018 | MAZ31100ML | DIODE ZENER | |
| D3019 | MAZ31100ML | DIODE ZENER | |
| D3020 | MAZ31100ML | DIODE ZENER | |
| D3021 | MAZ31100ML | DIODE ZENER | |
| D3022 | MAZ31100ML | DIODE ZENER | |
| D3023 | MAZ31100ML | DIODE ZENER | |
| D3024 | MAZ31100ML | DIODE ZENER | |
| D3025 | MAZ31100ML | DIODE ZENER | |
| D3026 | MAZ31100ML | DIODE ZENER | |
| D3027 | MAZ31100ML | DIODE ZENER | |
| D3028 | MAZ31100ML | DIODE ZENER | |
| D3029 | MAZ31100ML | DIODE ZENER | |
| D3030 | MAZ31100ML | DIODE ZENER | |
| D3031 | MAZ31100ML | DIODE ZENER | |
| D3032 | MAZ31100ML | DIODE ZENER | |
| D7060 | MA3X152K0L | DIODE | |
| **FUSES** | | | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| F801 | K5D632AD0002 | FUSE 6.3A/125V | ⚠ |
| INTEGRATED CIRCUITS | | | |
| IC451 | C1AA00000521 | VERTICAL OUT | |
| IC701 | AN6914S-E1 | INT CKT | |
| IC801 | AN8029 | INT CKT | ⚠ |
| IC802 | C0EAS0000025 | INT. CKT. | ⚠ |
| IC804 | B0EBKM000016 | DIODE RECTIFIER | |
| IC805 | AN78M12LB | INT CKT | |
| IC811 | 0N3171RLF | OPTO COUPLER | ⚠ |
| IC871 | SI-8050J | INT CKT | |
| IC872 | SI-8090J | INT CKT | |
| IC873 | C0DAAZG00006 | INT CKT | |
| IC880 | AN78N12-LB | INT CKT | |
| IC1101 | TVR2AJ157S | MPU EEPROM | |
| IC1112 | TVR2AJ158S | CONVERGENCE EEPROM | |
| IC1501 | AN6562S-E1 | INT CKT | |
| IC2201 | AN5849S-E1V | INT CKT | |
| IC2302 | C1AA00000645 | INT CKT | |
| IC2304 | BA15218F-E2 | INT CKT | |
| IC2451 | NJW1137MPTE1 | INT CKT | |
| IC3001 | C1AB00000460 | INT. CKT. | |
| IC3002 | AN15852A-VT | INT CKT | |
| IC7001 | C5AA00000108 | INT. CKT. (VIDEO) | |
| IC7002 | C5AA00000108 | INT. CKT. (VIDEO) | |
| RM002 | PNA4701M05TV | INT CKT | |
| COILS | | | |
| J106 | EXCELSA35T | FERRITE BEAD | |
| J210 | EXCELSA35T | FERRITE BEAD | |
| J211 | EXCELSA35T | FERRITE BEAD | |
| J141 | EXCELSA35T | FERRITE BEAD | |
| L003 | ELELN100KA | COIL | |
| L004 | ELELN100KA | COIL | |
| L006 | ELESN100JA | COIL PEAKING 10UH | |
| L007 | ELESN100JA | COIL PEAKING 10UH | |
| L301 | ELEBD101KA | COIL PEAKING 100UH | |
| L302 | ELESN100JA | COIL PEAKING 10UH | |
| L303 | ELESN6R8JA | COIL PEAKING 6.8UH | |
| L304 | ELESN4R7JA | COIL PEAKING 4.7UH | |
| L304 | EXCELSA39V | FERRITE BEAD | |
| L305 | EXCELSA39E | FERRITE BEAD | |
| L307 | EXCELSA39V | FERRITE BEAD | |
| L323 | EXCELSA39V | FERRITE BEAD | |
| L325 | EXCELSA39E | FERRITE BEAD | |
| L331 | ELESN100JA | COIL PEAKING 10UH | |
| L332 | ELESN6R8JA | COIL PEAKING 6.8UH | |
| L333 | G0C560KA0021 | COIL PEAKING 56UH | |
| L334 | ELESN4R7KA | COIL PEAKING 4.7UH | |
| L335 | ELEBD101KA | COIL PEAKING 100UH | |
| L337 | G0C560KA0021 | COIL PEAKING 56UH | |
| L361 | ELEBD101KA | COIL PEAKING 100UH | |
| L362 | ELESN100JA | COIL PEAKING 10UH | |
| L363 | ELESN150JA | COIL PEAKING 15UH | |
| L364 | ELESN4R7JA | COIL PEAKING 4.7UH | |
| L500 | TALL08TR82MA | COIL | |
| L501 | EXCELSA35T | FERRITE BEAD | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| L510 | EXCELDR25V | FERRITE BEAD | |
| L511 | EXCELDR25V | FERRITE BEAD | |
| L515 | EXCELDR25V | FERRITE BEAD | |
| L516 | EXCELDR25V | FERRITE BEAD | |
| L555 | ELH5L718 | COIL | |
| L701 | ELESN100KA | COIL PEAKING 10UH | |
| L702 | EXCELSA35T | FERRITE BEAD | |
| L703 | ELC18B152L | FILTER | |
| L704 | ELC18B151G | FILTER | |
| L801 | ELF18D650M | CHOKE AC LINE | ⚠ |
| L802 | ELF21N035A | LINE FILTER | ⚠ |
| L805 | EXCELDR25V | FERRITE BEAD | |
| L806 | EXCELDR25V | FERRITE BEAD | |
| L808 | EXCELDR35V | FERRITE BEAD | |
| L810 | EXCELDR25V | FERRITE BEAD | |
| L811 | EXCELDR25V | FERRITE BEAD | |
| L815 | EXCELSA39E | FERRITE BEAD | |
| L816 | EXCELSA39E | FERRITE BEAD | |
| L817 | TALL08T680KA | COIL | |
| L819 | EXCELDR35V | FERRITE BEAD | |
| L820 | EXCELDR35V | FERRITE BEAD | |
| L821 | EXCELDR35V | FERRITE BEAD | |
| L825 | TALL08T330KA | COIL | |
| L826 | TALL08T330KA | COIL | |
| L827 | TALL08T330KA | COIL | |
| L876 | G0ZZ00001909 | INT CKT | |
| L879 | G0ZZ00001909 | INT CKT | |
| L880 | G0ZZ00001909 | INT CKT | |
| L885 | ELELN470JA | COIL 47UH | |
| L886 | EXCELDR35V | FERRITE BEAD | |
| L887 | EXCELDR35V | FERRITE BEAD | |
| L888 | TALL08T680KA | COIL | |
| L889 | ELEKN101KA | COIL EPAKING 100UH | |
| L890 | ELEKN101KA | COIL PEAKING 100UH | |
| L892 | EXCELDR35V | FERRITE BEAD | |
| L893 | EXCELDR35V | FERRITE BEAD | |
| L894 | EXCELDR35V | FERRITE BEAD | |
| L895 | TALL08T220KA | TRANSFORMER LINE FILTER | |
| L901 | EXCELSA35T | FERRITE BEAD | |
| L902 | EXCELSA35T | FERRITE BEAD | |
| L903 | EXCELSA35T | FERRITE BEAD | |
| L931 | ELESN100JA | COIL PEAKING 10UH | |
| L933 | EXCELSA35T | FERRITE BEAD | |
| L934 | EXCELSA35T | FERRITE BEAD | |
| L935 | EXCELSA35T | FERRITE BEAD | |
| L961 | EXCELSA35T | FERRITE BEAD | |
| L962 | EXCELSA35T | FERRITE BEAD | |
| L963 | EXCELSA35T | FERRITE BEAD | |
| L1101 | ELESN100JA | COIL PEAKING 10UH | |
| L2201 | ELESN100JA | COIL PEAKING 10UH | |
| L2331 | ELC12E390 | COIL | |
| L2332 | ELC12E390 | COIL | |
| L2334 | EXCELDR35V | FERRITE BEAD | |
| L2335 | EXCELDR35V | FERRITE BEAD | |
| L2341 | TALL08T330KA | COIL | |
| L2342 | TALL08T330KA | COIL | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| L2502 | ELESN100JA | COIL PEAKING 10UH | |
| L3003 | ELESN102JA | COIL PEAKING 1000UH | |
| L3006 | ELESN102JA | COIL PEAKING 1000UH | |
| L3008 | ELESN560JA | COIL PEAKING 56UH | |
| L3009 | ELESN100JA | COIL PEAKING 10UH | |
| L3010 | ELESN560JA | COIL PEAKING 56UH | |
| L3011 | ELESN100JA | COIL PEAKING 10UH | |
| L3012 | ELJPA2R2MF | CHIP INDUCTOR 2.2UH | |
| L3013 | ELJPA100KF | CHIP INDUCTOR 10UH | |
| L7001 | EXCELSA39E | FERRITE BEAD | |
| L7002 | EXCELSA39E | FERRITE BEAD | |
| L7003 | EXCELSA39E | FERRITE BEAD | |
| L7004 | EXCELSA39E | FERRITE BEAD | |
| L7005 | EXCELSA39E | FERRITE BEAD | |
| L7006 | EXCELSA39E | FERRITE BEAD | |
| TRANSISTORS | | | |
| Q031 | 2SD601ARTX | TRANSISTOR | |
| Q301 | 2SC1473A | TRANSISTOR | |
| Q302 | 2SC3526H | TRANSISTOR | |
| Q303 | 2SC1473A | TRANSISTOR | |
| Q331 | 2SC3526H | TRANSISTOR | |
| Q353 | 2SC3942LB | TRANSISTOR | |
| Q354 | B1BAAN000025 | TRANSISTOR | |
| Q355 | B1BCAN000004 | TRANSISTOR | |
| Q361 | 2SC3311ATA | TRANSISTOR | |
| Q362 | 2SC3311ATA | TRANSISTOR | |
| Q363 | 2SC3526H | TRANSISTOR | |
| Q364 | 2SA1309ATA | TRANSISTOR | |
| Q365 | 2SC3311ATA | TRANSISTOR | |
| Q366 | 2SC3311ATA | TRANSISTOR | |
| Q368 | 2SA1309ATA | TRANSISTOR | |
| Q373 | 2SC3942LB | TRANSISTOR | |
| Q374 | B1BAAN000025 | TRANSISTOR | |
| Q375 | B1BCAN000004 | TRANSISTOR | |
| Q393 | 2SC3942LB | TRANSISTOR | |
| Q394 | B1BAAN000025 | TRANSISTOR | |
| Q395 | B1BCAN000004 | TRANSISTOR | |
| Q406 | 2SD601ARTX | TRANSISTOR | |
| Q501 | B1CEML000001 | TRANSISTOR | |
| Q502 | 2SK2847LBMAT | TRANSISTOR | |
| Q503 | 2SD601ARTX | TRANSISTOR | |
| Q509 | 2SC1473QR | TRANSISTOR | |
| Q510 | 2SC1473QR | TRANSISTOR | |
| Q512 | 2SD601ARTX | TRANSISTOR | |
| Q513 | 2SD601ARTX | TRANSISTOR | |
| Q551 | B1BAJW000001 | TRANSISTOR | |
| Q606 | 2SD601ARTX | TRANSISTOR | |
| Q701 | 2SK2538000LB | TRANSISTOR | |
| Q801 | 2SK2917LB | TRANSISTOR | |
| Q802 | 2SD601ARTX | TRANSISTOR | |
| Q803 | 2SB709ARTX | TRANSISTOR | |
| Q854 | 2SA19610QAHW | TRANSISTOR | |
| Q901 | 2SB1321ARA | TRANSISTOR | |
| Q903 | 2SA720TA | TRANSISTOR | |
| Q904 | 2SD1992ARA | TRANSISTOR | |
| Q905 | 2SC1318ATA | TRANSISTOR | |
| Q906 | 2SC1318ATA | TRANSISTOR | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| Q907 | 2SA720TA | TRANSISTOR | |
| Q931 | 2SD601ARTX | TRANSISTOR | |
| Q932 | 2SD601ARTX | TRANSISTOR | |
| Q933 | 2SD601ARTX | TRANSISTOR | |
| Q934 | 2SA720TA | TRANSISTOR | |
| Q935 | 2SC1318ATA | TRANSISTOR | |
| Q936 | 2SC1318ATA | TRANSISTOR | |
| Q937 | 2SA720TA | TRANSISTOR | |
| Q938 | 2SB1321ARA | TRANSISTOR | |
| Q941 | 2SD1992ARA | TRANSISTOR | |
| Q944 | 2SD601ARTX | TRANSISTOR | |
| Q945 | 2SB709ARTX | TRANSISTOR | |
| Q951 | 2SC3311ATA | TRANSISTOR | |
| Q952 | 2SC3311ATA | TRANSISTOR | |
| Q953 | 2SC3311ATA | TRANSISTOR | |
| Q955 | 2SA1248SRA | TRANSISTOR | |
| Q956 | 2SC3116SRA | TRANSISTOR | |
| Q957 | 2SA1248SRA | TRANSISTOR | |
| Q958 | 2SC3116SRA | TRANSISTOR | |
| Q959 | 2SA1248SRA | TRANSISTOR | |
| Q960 | 2SC3116SRA | TRANSISTOR | |
| Q961 | 2SB1321ARA | TRANSISTOR | |
| Q964 | 2SD1992ARA | TRANSISTOR | |
| Q965 | 2SA720TA | TRANSISTOR | |
| Q966 | 2SC1318ATA | TRANSISTOR | |
| Q967 | 2SC1318ATA | TRANSISTOR | |
| Q968 | 2SA720TA | TRANSISTOR | |
| Q1503 | 2SA1309ATA | TRANSISTOR | |
| Q1504 | B1BAAV000003 | TRANSISTOR | |
| Q1505 | 2SC3311ATA | TRANSISTOR | |
| Q2301 | 2SB709ARTX | TRANSISTOR | |
| Q2302 | 2SB709ARTX | TRANSISTOR | |
| Q2304 | 2SD601ARTX | TRANSISTOR | |
| Q2306 | UN2215TX | TRANSISTOR | |
| Q2307 | 2SB709ARTX | TRANSISTOR | |
| Q2313 | 2SD601ARTX | TRANSISTOR | |
| Q2314 | 2SD601ARTX | TRANSISTOR | |
| Q2451 | 2SD601ARTX | TRANSISTOR | |
| Q2452 | 2SD601ARTX | TRANSISTOR | |
| Q2501 | 2SD601ARTX | TRANSISTOR | |
| Q2502 | 2SD601ARTX | TRANSISTOR | |
| Q2503 | 2SD601ARTX | TRANSISTOR | |
| Q2504 | 2SB709ARTX | TRANSISTOR | |
| Q2505 | 2SB709ARTX | TRANSISTOR | |
| Q2506 | 2SB709ARTX | TRANSISTOR | |
| Q2507 | 2SB709ARTX | TRANSISTOR | |
| Q2508 | 2SB709ARTX | TRANSISTOR | |
| Q2509 | 2SB709ARTX | TRANSISTOR | |
| Q2510 | 2SB709ARTX | TRANSISTOR | |
| Q3002 | 2SD601ARTX | TRANSISTOR | |
| Q3003 | 2SD601ARTX | TRANSISTOR | |
| Q3005 | 2SD601ARTX | TRANSISTOR | |
| Q3006 | 2SD601ARTX | TRANSISTOR | |
| Q3007 | 2SD601ARTX | TRANSISTOR | |
| Q3008 | 2SD601ARTX | TRANSISTOR | |
| Q3011 | 2SB709ARTX | TRANSISTOR | |
| Q3012 | 2SD601ARTX | TRANSISTOR | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| Q3013 | 2SD601ARTX | TRANSISTOR | |
| Q3014 | 2SD601ARTX | TRANSISTOR | |
| Q3015 | 2SD601ARTX | TRANSISTOR | |
| Q7006 | 2SD601ARTX | TRANSISTOR | |
| Q7007 | 2SD601ARTX | TRANSISTOR | |
| Q7060 | 2SB709ARTX | TRANSISTOR | |
| Q7061 | 2SD601ARTX | TRANSISTOR | |
| RELAYS | | | |
| RL801 | K6B1ADA00010 | RELAY | ⚠ |
| RL802 | K6B1ADA00010 | RELAY | ⚠ |
| RESISTORS | | | |
| JS063 | ERDS2TJ124T | RES C 120K-J-1/4W | |
| R001 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R002 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R013 | ERG1SJ273P | RES M 27K-J-1W | |
| R015 | ERG1SJ273P | RES M 27K-J-1W | |
| R016 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R017 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R026 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R031 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R032 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R033 | ERJ6GEYJ220V | RES M 22-J-1/10W | |
| R072 | ERDS2TJ101T | RES C 100-J-1/4W | |
| R073 | ERDS2TJ471T | RES C 470-J-1/4W | |
| R080 | ERDS2TJ222T | RES C 2.2K-J-1/4W | |
| R081 | ERDS2TJ222T | RES C 2.2K-J-1/4W | |
| R082 | ERDS2TJ332T | RES C 3.3K-J-1/4W | |
| R083 | ERDS2TJ512T | RES C 5.1K-J-1/4W | |
| R084 | ERDS2TJ912T | RES C 9.1K-J-1/4W | |
| R086 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R087 | ERDS2TJ331T | RES C 330-J-1/4W | |
| R301 | ERDS1FJ394P | RES C 390K-J-1/2W | |
| R302 | ERDS2TJ151T | RES C 150-J-1/4W | |
| R303 | ER0S2THF2200 | RES M 22-F-1/4W | |
| R304 | ERDS2TJ334T | RES C 330K-J-1/4W | |
| R305 | ER0S2THF2200 | RES M 22-F-1/4W | |
| R306 | ER0S2THF4700 | RES M 47-F-1/4W | |
| R307 | ERDS2TJ220T | RES C 22-J-1/4W | |
| R308 | ERDS2TJ334T | RES C 330K-J-1/4W | |
| R310 | ERDS2TJ183T | RES C 18K-J-1/4W | |
| R311 | ERDS2TJ470T | RES C 47-J-1/4W | |
| R312 | ERG7ZJ272 | RES M 2.7K-J-7W | |
| R315 | ERDS2TJ563T | RES C 56K-J-1/4W | |
| R316 | ERDS2TJ821T | RES C 820-J-1/4W | |
| R319 | ERG12SJ101P | RES M 100-J-1W | |
| R320 | ERDS1FJ330P | RES C 33-J-1/2W | |
| R321 | ERDS1FJ330P | RES C 33-J-1/2W | |
| R322 | ERG12SJ101P | RES M 100-J-1W | |
| R325 | ERDS2TJ473T | RES C 47K-J-1/4W | |
| R327 | ERC12GK331D | RES C 330-K-1/2W | |
| R328 | ERDS1TJ104T | RES C 100K-J-1/2W | |
| R331 | ER0S2THF2200 | RES M 22-F-1/4W | |
| R332 | ERDS2TJ151T | RES C 150-J-1/4W | |
| R333 | ER0S2THF2200 | RES M 22-F-1/4W | |
| R334 | ERDS2TJ220T | RES C 22-J-1/4W | |
| R335 | ER0S2THF4700 | RES M 47-F-1/4W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R345 | ERDS2TJ470T | RES C 47-J-1/4W | |
| R347 | ERG7ZJ272 | RES M 2.7K-J-7W | |
| R348 | ERDS2TJ563T | RES C 56K-J-1/4W | |
| R349 | ERDS2TJ821T | RES C 820-J-1/4W | |
| R350 | ERG12SJ101P | RES M 100-J-1W | |
| R351 | ERDS1FJ330P | RES C 33-J-1/2W | |
| R352 | ERDS1FJ330P | RES C 33-J-1/2W | |
| R353 | ERG12SJ101P | RES M 100-J-1W | |
| R354 | ERDS2TJ473T | RES C 47K-J-1/4W | |
| R356 | ERC12GK331D | RES C 330-K-1/2W | |
| R357 | ERDS1TJ104T | RES C 100K-J-1/2W | |
| R361 | ER0S2THF1302 | RES M 13K-F-1/4W | |
| R362 | ER0S2THF1002 | RES M 10K-F-1/4W | |
| R363 | ERDS2TJ220T | RES C 22-J-1/4W | |
| R364 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R365 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R366 | ERDS2TJ151T | RES C 150-J-1/4W | |
| R367 | ER0S2THF2200 | RES M 22-F-1/4W | |
| R368 | ER0S2THF2200 | RES M 22-F-1/4W | |
| R369 | ERDS2TJ472T | RES C 4.7K-J-1/4 | |
| R371 | ER0S2THF4700 | RES M 47-F-1/4W | |
| R372 | ER0S2THF82R0 | RES M 82.0-F-1/4W | |
| R375 | ERDS2TJ470T | RES C 47-J-1/4W | |
| R376 | ERG7ZJ272 | RES M 2.7K-J-7W | |
| R379 | ERDS2TJ563T | RES C 56K-J-1/4W | |
| R380 | ERDS2TJ821T | RES C 820-J-1/4W | |
| R383 | ERG12SJ101P | RES M 100-J-1W | |
| R384 | ERDS1FJ330P | RES C 33-J-1/2W | |
| R385 | ERDS1FJ330P | RES C 33-J-1/2W | |
| R386 | ERG12SJ101P | RES M 100-J-1W | |
| R389 | ERDS2TJ473T | RES C 47K-J-1/4W | |
| R390 | ERC12GK331D | RES C 330-K-1/2W | |
| R391 | ERDS1TJ104T | RES C 100K-J-1/2W | |
| R392 | ER0S2THF8201 | RES M 8.2K-F-1/4W | |
| R393 | ER0S2THF8201 | RES M 8.2K-F-1/4W | |
| R394 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R395 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R396 | ERDS2TJ472T | RES C 4.7K-J-1/4 | |
| R397 | ER0S2THF1201 | RES M 1.2K-F-1/4W | |
| R398 | ER0S2THF3300 | RES M 33-F-1/4W | |
| R408 | ERJ6GEYJ272V | RES M 2.7K-J-1/10W | |
| R409 | ERDS2TJ563T | RES C 56K-J-1/4W | |
| R410 | ERJ6GEYJ224V | RES M 220K-J-1/10W | |
| R411 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R412 | ERJ6GEYJ682V | RES M 6.8K-J-1/10W | |
| R415 | ERG3FJ331H | RES M 330-J-3W | |
| R421 | ERJ6ENF2702V | RES M 27K-F-1/10W | |
| R422 | ERJ6ENF1000V | RES M 100-F-1/10W | |
| R423 | ERJ6ENF5601V | RES M 5.6K-F-1/10W | |
| R425 | ERDS1FJ1R0T | RES C 1.0-J-1/2W | |
| R426 | ERJ6ENF1502V | RES M 15K-F-1/10W | |
| R428 | ERJ6ENF1002V | RES M 10K-F-1/10W | |
| R434 | ERX12SJ1R8V | RES M 1.8-J-2W | |
| R435 | ERX12SJ1R8V | RES M 1.8-J-2W | |
| R464 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R470 | ERDS2TJ331T | RES C 330-J-1/4W | |
| R471 | ERDS2TJ331T | RES C 330-J-1/4W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R472 | ERDS2TJ331T | RES C 330-J-1/4W | |
| R501 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |
| R502 | ERJ6GEYJ680V | RES M 68-J-1/10W | |
| R503 | ERG2FJ180H | RES M 18-J-2W | |
| R504 | ERG3FJ271H | RES M 270-J-3W | |
| R505 | ERG1SJ120P | RES M 12-J-1W | |
| R506 | ERX1SJR47P | RES M .47-J-1W | |
| R512 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R513 | ERDS2TJ471T | RES C 470-J-1/4W | |
| R514 | ER0S2THF3322 | RES M 33.2-F-1/4W | |
| R515 | ER0S2THF4702 | RES M 47K-F-1/4W | |
| R516 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R517 | ERDS2TJ103T | RES C 10K-J-1/4W | |
| R518 | ERX12SJR22V | RES M .22-J-1/2 | |
| R519 | ERQ12HKR22P | RES F .22-K-1/2W | |
| R520 | ERQ12HJ330P | RES F 33-J-1/2W | ⚠ |
| R521 | ER0S2THF2612 | RES M 26.1K-F-1/4W | ⚠ |
| R522 | ER0S2THF7151 | RES M 7.15K-F-1/4W | ⚠ |
| R523 | ERDS2TJ275T | RES C 2.7MEG-J-1/4W | |
| R525 | ERJ6GEYJ272V | RES M 2.7K-J-1/10W | |
| R534 | ER0S2THF1203 | RES M 120K-F-1/4W | |
| R535 | ERDS2TJ222T | RES C 2.2K-J-1/4W | |
| R536 | ERDS2TJ101T | RES C 100-J-1/4W | |
| R537 | ERJ6GEYJ272V | RES M 2.7K-J-1/10W | |
| R538 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R539 | ERDS2TJ393T | RES C 39K-J-1/4W | |
| R541 | ERDS2TJ563T | RES C 56K-J-1/4W | |
| R550 | ER0S2THF1002 | RES M 10K-F-1/4W | |
| R560 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R561 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R562 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |
| R621 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R622 | ERJ6GEYJ152V | RES M 1.5K-J-1/10W | |
| R624 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R643 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R653 | ERDS2TJ101T | RES C 100-J-1/4W | |
| R654 | ERDS2TJ184T | RES C 180K-J-1/4W | |
| R655 | ERDS2TJ184T | RES C 180K-J-1/4W | |
| R704 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R706 | ERDS1FJ680T | RES C 68-J-1/2W | |
| R708 | ERF5AK4R7H | RES W 4.7-K-5W | |
| R800 | ERU5TCK1R5T | RES F 1.5-K-5W | ⚠ |
| R805 | ERDS2TJ101T | RES C 100-J-1/4W | |
| R808 | ERX12SZJR12P | RES M .12-J-1/2W | |
| R809 | ERJ6GEYJ225V | RES M 2.2M-J-1/10W | |
| R810 | ERX12SZJR12P | RES M .12-J-1/2W | |
| R811 | ERX12SZJR12P | RES M .12-J-1/2W | |
| R812 | ERDS2TJ103T | RES C 10K-J-1/4W | |
| R813 | ERDS1FJ561T | RES C 560-J-1/2 | |
| R814 | ERDS2TJ4R7T | RES C 4.7-J-1/4W | |
| R815 | ERJ6GEYJ301V | RES M 300-J-1/10W | |
| R816 | ERDS2TJ471T | RES C 470-J-1/4W | |
| R817 | ERJ6ENF2001V | RES M 2K-F-1/10W | |
| R818 | ERDS1FJ100T | RES C 10-J-1/2W | |
| R820 | ERDS1FJ470T | RES C 47-J-1/2W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R822 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R832 | ERD75TAJ825 | RES C 8.2MEG-J-3/4W | ⚠ |
| R833 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R835 | ERDS2TJ101T | RES C 100-J-1/4W | |
| R836 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R839 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R840 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R846 | ERDS2TJ223T | RES C 22K-J-1/4W | |
| R847 | ERDS2TJ272T | RES C 2.7K-J-1/4W | |
| R857 | ERX1SJ1R0P | RES M 1.0-J-1W | |
| R858 | ERX1SJ1R0P | RES M 1.0-J-1W | |
| R859 | ERDS2TJ103T | RES C 10K-J-1/4W | |
| R860 | ERDS1FJ222T | RES C 2200-J-1/2W | |
| R862 | ERG3FJ333H | RES M 33K-J-3W | |
| R865 | ERJ6GEYJ153V | RES M 15K-J-1/10W | |
| R866 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R867 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R880 | TSF39402 | FUSE 4.0A/125V | |
| R881 | TSF39402 | FUSE 4.0A/125V | |
| R888 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R889 | ERJ6ENF1581V | RES M 158-F-1/10W | |
| R895 | ERDS2TJ560T | RES C 56-J-1/4W | |
| R901 | ERDS2FJ122T | RES C 1.2K-J-1/2W | |
| R902 | ERDS2TJ103T | RES C 10K-J-1/4W | |
| R903 | ERDS2TJ683T | RES C 68K-J-1/4W | |
| R904 | ERDS2TJ683T | RES C 68K-J-1/4W | |
| R905 | ERDS2TJ103T | RES C 10K-J-1/4W | |
| R906 | ERDS2TJ122T | RES C 1.2K-J-1/4W | |
| R907 | ERDS1FVJ390T | RES C 39-J-1/2W | |
| R908 | ERDS1FVJ390T | RES C 39-J-1/2W | |
| R909 | ERDS1FVJ8R2T | RES C 8.2-J-1/2W | |
| R910 | ERDS2TJ8R2T | RES C 8.2-J-1/4W | |
| R911 | ERG3SJS221H | RES M 220-J-3W | |
| R912 | ERDS2TJ681T | RES C 680-J-1/4W | |
| R913 | ERDS1FVJ152T | RES C 1.5K-J-1/2W | |
| R914 | ERDS1FVJ152T | RES C 1.5K-J-1/2W | |
| R915 | ERQ14AJ220P | RES F 22-J-1/4W | |
| R916 | ERQ14AJ220P | RES F 22-J-1/4W | |
| R917 | ERQ14AJ100P | RES F 10-J-1/4W | |
| R925 | ERDS2TJ151T | RES C 150-J-1/4W | |
| R926 | ERDS2TJ151T | RES C 150-J-1/4W | |
| R928 | ERQ14AJ220P | RES F 22-J-1/4W | |
| R929 | ERDS2TJ101T | RES C 100-J-1/4W | |
| R931 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R932 | ERJ6GEYJ393V | RES M 39K-J-1/10W | |
| R933 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R934 | ERJ6GEYJ153V | RES M 15K-J-1/10W | |
| R935 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R936 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R937 | ERJ6GEYJ151V | RES M 150-J-1/10W | |
| R938 | ERJ6GEYJ121V | RES M 120-J-1/10W | |
| R939 | ERJ6GEYJ470V | RES M 47-J-1/10W | |
| R942 | ERDS1FVJ152T | RES C 1.5K-J-1/2W | |
| R943 | ERDS1FVJ152T | RES C 1.5K-J-1/2W | |
| R944 | ERDS2TJ471T | RES C 470-J-1/4W | |
| R945 | ERDS2TJ471T | RES C 470-J-1/4W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R946 | ERQ14AJ100P | RES F 10-J-1/4W | |
| R947 | ERQ14AJ220P | RES F 22-J-1/4W | |
| R948 | ERDS2FJ122T | RES C 1.2K-J-1/2W | |
| R949 | ERDS2TJ103T | RES C 10K-J-1/4W | |
| R950 | ERDS2TJ683T | RES C 68K-J-1/4W | |
| R951 | ERDS2TJ683T | RES C 68K-J-1/4W | |
| R952 | ERDS2TJ103T | RES C 10K-J-1/4W | |
| R953 | ERDS2TJ122T | RES C 1.2K-J-1/4W | |
| R954 | ERDS1FVJ390T | RES C 39-J-1/2W | |
| R955 | ERDS1FVJ390T | RES C 39-J-1/2W | |
| R956 | ERDS1FVJ8R2T | RES C 8.2-J-1/2W | |
| R957 | ERDS2TJ8R2T | RES C 8.2-J-1/4W | |
| R958 | ERG3SJS221H | RES M 220-J-3W | |
| R959 | ERDS2TJ471T | RES C 470-J-1/4W | |
| R961 | ERDS2FJ122T | RES C 1.2K-J-1/2W | |
| R962 | ERDS2TJ103T | RES C 10K-J-1/4W | |
| R963 | ERDS2TJ683T | RES C 68K-J-1/4W | |
| R964 | ERDS2TJ683T | RES C 68K-J-1/4W | |
| R965 | ERDS2TJ103T | RES C 10K-J-1/4W | |
| R966 | ERDS2TJ122T | RES C 1.2K-J-1/4W | |
| R967 | ERDS1FVJ390T | RES C 39-J-1/2W | |
| R968 | ERDS1FVJ390T | RES C 39-J-1/2W | |
| R969 | ERDS1FVJ8R2T | RES C 8.2-J-1/2W | |
| R970 | ERDS2TJ8R2T | RES C 8.2-J-1/4W | |
| R971 | ERG3SJS221H | RES M 220-J-3W | |
| R972 | ERDS2TJ101T | RES C 100-J-1/4W | |
| R973 | ERDS1FVJ152T | RES C 1.5K-J-1/2W | |
| R974 | ERDS1FVJ152T | RES C 1.5K-J-1/2W | |
| R975 | ERQ14AJ100P | RES F 10-J-1/4W | |
| R976 | ERQ14AJ220P | RES F 22-J-1/4W | |
| R978 | ERQ14AJ220P | RES F 22-J-1/4W | |
| R981 | ERJ6GEYJ182V | RES M 1.8K-J-1/10W | |
| R983 | ERJ6GEYJ470V | RES M 47-J-1/10W | |
| R984 | ERJ6GEYJ330V | RES M 33-J-1/10W | |
| R985 | ERJ6GEYJ330V | RES M 33-J-1/10W | |
| R1103 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R1106 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R1107 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R1108 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R1109 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R1110 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R1112 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R1113 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R1114 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R1502 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R1503 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R1504 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R1505 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R1506 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R1507 | ERG3SJD152L | RES M 1.5K-J-3W | |
| R1508 | ERJ6GEYJ152V | RES M 1.5K-J-1/10W | |
| R1509 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R1510 | ERG2SJD333L | RES M 33K-J-2W | |
| R1511 | ERG2SJD333L | RES M 33K-J-2W | |
| R1512 | ERJ6ENF2201V | RES M 2.2K-F-1/10W | |
| R1514 | ERG2SJD333L | RES M 33K-J-2W | |
| R1515 | ERJ6ENF1001V | RES M 1K-F-1/10W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R1516 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R1517 | ERJ6ENF3571V | RES M 3.57K-F-1/10W | |
| R1518 | ERG2SJD333L | RES M 33K-J-2W | |
| R1519 | ERDS2TJ101T | RES C 100-J-1/4W | |
| R1520 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R1521 | ER0S2THF1500 | RES M 150-F-1/4W | |
| R1522 | ERC12GK103D | RES C 10K-K-1/2W | |
| R1523 | ERDS2TJ104T | RES C 100K-J-1/4W | |
| R1524 | ER0S2THF1401 | RES M 140-F-1/4W | |
| R1527 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R1528 | ERDS2TJ332T | RES C 3.3K-J-1/4W | |
| R1529 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R1532 | ERJ6ENF2201V | RES M 2.2K-F-1/10W | |
| R1542 | ERG2SJD333L | RES M 33K-J-2W | |
| R1544 | ERJ6GEYJ471V | RES M 470-J-1/10W | |
| R1546 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R1599 | ERJ6ENF9761V | RES M 9760-F-1/10W | |
| R2203 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R2206 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R2207 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2221 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R2301 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2302 | ERJ6GEYJ392V | RES M 3.9K-J-1/10W | |
| R2303 | ERJ6GEYJ271V | RES M 270-J-1/10W | |
| R2304 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R2305 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R2307 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R2308 | ERJ6GEYJ183V | RES M 18K-J-1/10W | |
| R2313 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2314 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2315 | ERJ6GEYJ122V | RES M 1.2K-J-1/10W | |
| R2316 | ERJ6GEYJ122V | RES M 1.2K-J-1/10W | |
| R2324 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2325 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2326 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2327 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R2328 | ERJ6GEYJ273V | RES M 27K-J-1/10W | |
| R2329 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R2332 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2333 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R2334 | ERJ6ENF1501V | RES M 1.5K-F-1/10W | |
| R2335 | ERJ6ENF1501V | RES M 1.5K-F-1/10W | |
| R2336 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2337 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2338 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R2339 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2342 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2345 | ERJ6GEYJ273V | RES M 27K-J-1/10W | |
| R2346 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R2348 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2349 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2351 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R2352 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R2353 | ERJ6ENF4701V | RES M 4.7K-F-1/10W | |
| R2354 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2355 | ERJ6GEYJ683V | RES M 68K-J-1/10W | |
| R2356 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R2357 | ERJ6ENF1303V | RES M 130K-F-1/10W | |
| R2358 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R2359 | ERJ6GEYJ683V | RES M 68K-J-1/10W | |
| R2360 | ERJ6ENF4701V | RES M 4.7K-F-1/10W | |
| R2361 | ERJ6ENF1202V | RES M 12K-F-1/10 | |
| R2362 | ERJ12YJ101U | RES M 100-J-1/2W | |
| R2363 | ERJ6ENF5232V | RES M 5.32K-F-1/10W | |
| R2364 | ERJ6ENF1202V | RES M 12K-F-1/10 | |
| R2365 | ERJ6ENF1202V | RES M 12K-F-1/10 | |
| R2366 | ERJ6ENF1202V | RES M 12K-F-1/10 | |
| R2367 | ERJ12YJ101U | RES M 100-J-1/2W | |
| R2368 | ERJ6ENF5232V | RES M 5.32K-F-1/10W | |
| R2371 | ERJ6ENF1201V | RES M 1.2K-F-1/10WW / PT-53WX53G, PT-47WX53G, / PT-47WXC43G, PT-4743G, / PT-56WX53G | |
| R2372 | ERJ6ENF1201V | RES M 1.2K-F-1/10WW / PT-53WX53G, PT-47WX53G, / PT-47WXC43G, PT-4743G, / PT-56WX53G | |
| R2451 | ERJ6GEYJ681V | RES M 680-J-1/10W | |
| R2452 | ERJ6GEYJ681V | RES M 680-J-1/10W | |
| R2456 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2457 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2460 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R2461 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R2501 | ERJ6ENF1200V | RES M 120-F-1/10W | |
| R2502 | ERJ6ENF2200V | RES M 220-F-1/10W | |
| R2503 | ERJ6ENF2200V | RES M 220-F-1/10W | |
| R2504 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R2505 | ERJ6ENF15R0V | RES M 15.0-F-1/10W | |
| R2506 | ERJ6ENF15R0V | RES M 15.0-F-1/10W | |
| R2507 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R2508 | ERJ6ENF2200V | RES M 220-F-1/10W | |
| R2509 | ERJ6ENF1200V | RES M 120-F-1/10W | |
| R2510 | ERJ6ENF2200V | RES M 220-F-1/10W | |
| R2511 | ERJ6ENF1200V | RES M 120-F-1/10W | |
| R2512 | ERJ6ENF2200V | RES M 220-F-1/10W | |
| R2513 | ERJ6ENF15R0V | RES M 15.0-F-1/10W | |
| R2514 | ERJ6ENF2200V | RES M 220-F-1/10W | |
| R2515 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R2519 | ERJ6GEYJ560V | RES M 56-J-1/10W | |
| R2520 | ERJ6GEYJ560V | RES M 56-J-1/10W | |
| R2537 | ERJ6GEYJ122V | RES M 1.2K-J-1/10W | |
| R2538 | ERJ6GEYJ122V | RES M 1.2K-J-1/10W | |
| R2539 | ERJ6GEYJ122V | RES M 1.2K-J-1/10W | |
| R2541 | ERJ6GEYJ122V | RES M 1.2K-J-1/10W | |
| R2542 | ERJ6GEYJ122V | RES M 1.2K-J-1/10W | |
| R2543 | ERJ6GEYJ122V | RES M 1.2K-J-1/10W | |
| R2568 | ERJ6ENF6801V | RES M 6.8K-F-1/10W | |
| R2569 | ERJ6ENF8201V | RES M 8.2K-F-1/10W | |
| R2570 | ERJ6GEYJ560V | RES M 56-J-1/10W | |
| R2573 | ERJ6GEYJ201V | RES M 200-J-1/10W | |
| R2580 | ERJ6GEYJ201V | RES M 200-J-1/10W | |
| R2587 | ERJ6GEYJ201V | RES M 200-J-1/10W | |
| R3001 | ERDS2TJ331T | RES C 330-J-1/4W | |
| R3002 | ERDS2TJ331T | RES C 330-J-1/4W | |
| R3003 | ERJ6GEYJ471V | RES M 470-J-1/10W | |
| R3004 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3005 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3006 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R3007 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3008 | ERJ6GEYJ750V | RES M 75-J-1/10W | |
| R3009 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3010 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R3011 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3012 | ERJ6GEYJ562V | RES M 5.6K-J-1/10W | |
| R3013 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R3014 | ERJ6GEYJ562V | RES M 5.6K-J-1/10W | |
| R3015 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3016 | ERDS2TJ562T | RES C 5.6K-J-1/4W | |
| R3017 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R3018 | ERJ6GEYJ562V | RES M 5.6K-J-1/10W | |
| R3019 | ERJ6GEYJ562V | RES M 5.6K-J-1/10W | |
| R3020 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3021 | ERDS2TJ562T | RES C 5.6K-J-1/4W | |
| R3022 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3023 | ERDS2TJ562T | RES C 5.6K-J-1/4W | |
| R3024 | ERDS2TJ562T | RES C 5.6K-J-1/4W | |
| R3025 | ERJ6GEYJ562V | RES M 5.6K-J-1/10W | |
| R3026 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3027 | ERJ6GEYJ562V | RES M 5.6K-J-1/10W | |
| R3028 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R3029 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3030 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3031 | ERJ6GEYJ561V | RES M 560-J-1/10W | |
| R3032 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3033 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3034 | ERJ6ENF3600V | RES M 360-F-1/10W | |
| R3035 | ERJ6ENF3300V | RES M 330-F-1/10W | |
| R3036 | ERJ6ENF3300V | RES M 330-F-1/10W | |
| R3037 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3038 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3039 | ERJ6GEYJ750V | RES M 75-J-1/10W | |
| R3040 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R3041 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3042 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3043 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3044 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3045 | ERJ6ENF3600V | RES M 360-F-1/10W | |
| R3046 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3047 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3048 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3049 | ERJ6GEYJ561V | RES M 560-J-1/10W | |
| R3050 | ERJ6ENF3300V | RES M 330-F-1/10W | |
| R3051 | ERJ6ENF3600V | RES M 360-F-1/10W | |
| R3052 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3053 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3054 | ERJ6GEYJ560V | RES M 56-J-1/10W | |
| R3055 | ERJ6GEYJ220V | RES M 22-J-1/10W | |
| R3056 | ERJ6GEYJ561V | RES M 560-J-1/10W | |
| R3057 | ERJ6GEYJ750V | RES M 75-J-1/10W | |
| R3058 | ERJ6GEYJ560V | RES M 56-J-1/10W | |
| R3059 | ERJ6GEYJ560V | RES M 56-J-1/10W | |
| R3060 | ERJ6GEYJ560V | RES M 56-J-1/10W | |
| R3061 | ERJ6GEYJ560V | RES M 56-J-1/10W | |
| R3062 | ERJ6GEYJ560V | RES M 56-J-1/10W | |
| R3063 | ERJ6GEYJ221V | RES M 220-J-1/10W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R3064 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R3065 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R3069 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R3070 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R3071 | ERJ6GEYJ561V | RES M 560-J-1/10W | |
| R3072 | ERJ6GEYJ561V | RES M 560-J-1/10W | |
| R3073 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R3075 | ERJ6GEYJ561V | RES M 560-J-1/10W | |
| R3078 | ERJ6ENF3300V | RES M 330-F-1/10W | |
| R3079 | ERJ6ENF3600V | RES M 360-F-1/10W | |
| R3081 | ERJ6GEYJ331V | RES M 330-J-1/10W | |
| R3082 | ERJ6GEYJ331V | RES M 330-J-1/10W | |
| R3083 | ERJ6GEYJ331V | RES M 330-J-1/10W | |
| R3084 | ERJ6GEYJ331V | RES M 330-J-1/10W | |
| R3085 | ERJ6GEYJ220V | RES M 22-J-1/10W | |
| R3087 | ERJ6GEYJ220V | RES M 22-J-1/10W | |
| R3088 | ERJ6GEYJ220V | RES M 22-J-1/10W | |
| R3092 | ERJ6GEYJ220V | RES M 22-J-1/10W | |
| R3094 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3095 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3096 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3099 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3100 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3101 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3102 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3103 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3104 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3105 | ERJ6GEYJ271V | RES M 270-J-1/10W | |
| R3107 | ERJ6GEYJ221V | RES M 220-J-1/10W | |
| R3108 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3109 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R3110 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R3111 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3112 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3116 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3120 | ERJ6GEYJ271V | RES M 270-J-1/10W | |
| R3123 | ERJ6GEYJ271V | RES M 270-J-1/10W | |
| R3127 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3128 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3132 | ERJ6GEYJ271V | RES M 270-J-1/10W | |
| R3135 | ERJ6GEYJ271V | RES M 270-J-1/10W | |
| R3157 | ERJ6GEYJ271V | RES M 270-J-1/10W | |
| R7001 | ERG2FJ820H | RES M 82-J-2W | |
| R7002 | ERG2FJ121H | RES M 120-J-2W | |
| R7003 | ERG2FJ820H | RES M 82-J-2W | |
| R7004 | ERG2FJ121H | RES M 120-J-2W | |
| R7005 | ERG2FJ820H | RES M 82-J-2W | |
| R7006 | ERG2FJ121H | RES M 120-J-2W | |
| R7011 | ERX2FJ2R2H | RES M 2.2-J-2W | |
| R7012 | ERX2FJ2R2H | RES M 2.2-J-2W | |
| R7013 | ERX2FJ2R2H | RES M 2.2-J-2W | |
| R7014 | ERX2FJ2R2H | RES M 2.2-J-2W | |
| R7015 | ERX2FJ2R2H | RES M 2.2-J-2W | |
| R7016 | ERX2FJ2R2H | RES M 2.2-J-2W | |
| R7023 | ERJ6GEYJ273V | RES M 27K-J-1/10W | |
| R7024 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R7026 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R7027 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R7029 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R7030 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R7031 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R7032 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R7034 | ERJ6GEYJ273V | RES M 27K-J-1/10W | |
| R7035 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R7036 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R7037 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R7038 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R7040 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R7041 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R7045 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R7046 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R7047 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R7048 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R7052 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R7055 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R7058 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R7059 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |
| R7060 | ERX1SJR27P | RES M .27-J-1W | |
| R7061 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R7062 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R7063 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R7064 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R7065 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R7066 | ERX1SJR27P | RES M .27-J-1W | |
| SWITCHES | | | |
| S010 | SKHHDTA010 | SWITCH | |
| S011 | SKHHDTA010 | SWITCH | |
| S012 | SKHHDTA010 | SWITCH | |
| S013 | SKHHDTA010 | SWITCH | |
| S014 | SKHHDTA010 | SWITCH | |
| S015 | SKHHDTA010 | SWITCH | |
| S016 | SKHHDTA010 | SWITCH | |
| TRANSFORMERS | | | |
| T501 | ETH19K204AZ | TRANSFORMER | |
| T551 | KFT7AA334F | TRANSFORMER FLYBACK | ⚠ |
| T801 | ETS42AD495AD | TRANSFORMER | ⚠ |
| T802 | ETP30KB941JG | TRANSFORMER | ⚠ |
| OTHERS | | | |
| TNR001 | ENG36619G | MAIN TUNER | ⚠ |
| TNR002 | ENG36620G | SUB TUNER | ⚠ |
| M001 | TSX2AA0381 | LINE CORD | ⚠ |
| 1 | TXFCRT24GSER | ASSY PRT (BLUE) / PT-47WX53G, PT-47WXC43G, / PT-4743G, PT-47WX33G | ⚠ |
| | TXFCRT25GSER | ASSY PRT (GREEN) / PT-47WX53G, PT-47WXC43G, / PT-4743G, PT-47WX33G | ⚠ |
| | TXFCRT26GSER | ASSY PRT (RED) / PT-47WX53G, PT-47WXC43G, / PT-4743G, PT-47WX33G | ⚠ |
| | TXFCRT27GSER | ASSY PRT(BLUE) / PT-53WX53G, PT-56WX53G | ⚠ |
| | TXFCRT28GSER | ASSY PRT(GREEN) / PT-53WX53G, PT-56WX53G | ⚠ |
| | TXFCRT29GSER | ASSY PRT(RED) / PT-53WX53G, PT-56WX53G | ⚠ |
| M002 | K3B10CA00006 | SOCKET CRT | ⚠ |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| 2 | KDY2ASF83F | YOKE DEFLECTION | ⚠ |
| M003 | TXF3A01ECV | ASSY DAG GND | |
| 3 | TKG2AF020-1 | A/B LENS / PT-47WX53G, PT-47WXC43G, / PT-4743G, PT-47WX33G | |
| | TKG2AF021-1 | A/B LENS / PT-53WX53G, PT-56WX53G | |
| 4 | TKG2AA50041 | MIRROR GLASS PT-56WX53G | |
| | TKG2AA50091 | MIRROR GLASS / PT-47WX53G, PT-47WXC43G, / PT-4743G, PT-47WX33G | |
| | TKG2AA50111 | MIRROR GLASS PT-53WX53G | |
| 5 | TMW2AX0041B | BRACKET MIRROR SIDE | |
| 6 | TMW2AX0161 | BRACKET MIRROR MTG (TOP) | |
| 7 | TKG2AD00062 | SCREEN PANEL PROTECTIVE / PT-56WX53G | |
| | TKG2AD00071 | SCREEN PANEL PROTECTIVE / PT-47WX53G | |
| | TKG2AD00091 | SCREEN PANEL PROTECTIVE / PT-53WX53G | |
| | TY-47WX49SK | SCREEN PROTECTIVE PT-4743G | |
| 8 | TKG2AH50611 | SCREEN FRESNEL PT-53WX53G | |
| | TKG2AH50681 | SCREEN FRESNEL / PT-47WX53G, PT-47WXC43G, / PT-4743G, PT-47WX33G | |
| | TKG2AH50691 | SCREEN FRESNEL PT-56WX53G | |
| 9 | TKG2AH50381 | SCREEN LENTICULAR PT-53WX53G | |
| | TKG2AH50461 | SCREEN LENTICULAR / PT-47WX53G, PT-47WXC43G, / PT-4743G, PT-47WX33G | |
| | TKG2AH50531 | SCREEN LENTICULAR PT-56WX53G | |
| M004 | TKE2AA00126 | FRAME SCREEN PLAT. SIL. / PT-56WX53G | |
| 10 | TMW2AX0181 | BRACKET SCREEN, CORNER | |
| 11 | TMW2AX0132 | BRACKET SCREEN | |
| 12 | TKU2AC2201S | BACK CABINET / PT-47WX53G, PT-47WXC43G, / PT-4743G, PT-47WX33G | |
| | TKU2AC2601S | BACK CABINET / PT-53WX53G | |
| 13 | TKY2AA3003S | FRONT CABINET / PT-47WX53G | |
| | TKY2AA3005S | FRONT CABINET / PT-47WXC43G, PT-4743G, / PT-47WX33G | |
| | TKY2AA3405S | FRONT CABINET / PT-53WX53G | |
| 14 | TKB2AA0172S | LOWER CABINET WOOD PTV / PT-47WXC43G, PT-4743G, / PT-47WX33G | |
| | TKB2AA0201S | LOWER CABINET WOOD PTV / PT-53WX53G | |
| | TKB2AA0173S | LOWER CABINET WOOD PTV / PT-47WX53G | |
| 15 | TKB2AA0192S | CABINET WOOD PTV / PT-56WX53G | |
| M005 | TBL2AH30071 | CASTER | |
| 16 | TKD2AX2412S | INNER BARRIER BOARD / PT-56WX53G | |
| | TKD2AX2572S | INNER BARRIER BOARD / PT-53WX53G, PT-47WX53G, / PT-47WXC43G, PT-4743G, / PT-47WX33G | |
| 17 | TKU2AA03201 | LOWER BACK COVER / PT-53WX53G, PT-47WX53G, / PT-47WXC43G, PT -4743G, / PT-47WX33G | |
| | TKU2AA03401 | LOWER BACK COVER / PT-56WX53G | |
| 18 | EASJ6PH05A3 | SPEAKER (TWEETER) / PT-53WX53G, PT-56WX53G | |
| | TAS2AA0022 | SPEAKER (TWEETER) / PT-47WX53G | |
| 19 | TAS2AA0026 | SPEAKER / PT-47WXC43G, PT-4743G, / PT-47WX33G | |
| | TAS2AA0027 | SPEAKER / PT-47WX53G | |
| | EAST14PL31A6 | SPEAKER / PT-53WX53G, PT-56WX53G | |
| 20 | TKP2AA0622S | SPEAKER GRILLE / PT-47WXC43G, PT-4743G / PT-47WX33G | |
| | TKP2AA0626S | SPEAKER GRILLE / PT-53WX53G, PT-47WX53G | |
| 21 | TKP2AA0699S | SIDE GRILLE (L) / PT-56WX53G | |
| 22 | TKP2AA06910S | SIDE GRILLE (R) / PT-56WX53G | |
| 23 | TXFKP02FSER | ASSY CENTER GRILLE / PT-56WX53G | |
| 24 | TBM2AA0012 | BADGE PANASONIC | |
| 25 | TKP2AA0649S | CONTROL PANEL / PT-53WX53G, PT-47WX53G | |
| | TKP2AA06496S | CONTROL PANEL / PT-47WXC43G, PT-4743G, / PT-47WX33G | |
| | TKP2AA06492S | CONTROL PANEL PT-56WX53G | |
| 26 | TBX2AA0161G | BUTTON 7-KEY / PT-53WX53G, PT-47WX53G, / PT-56WX53G | |
| 27 | TKP2AA0681 | LED PANEL / PT-53WX53G, PT-47WX53G, / PT-56WX53G | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| 28 | ENPE2A001 | SPLITTER 2RF | |
| 29 | TXFKP07GSER | ASSY REAR BRACKET | |
| 30 | KFT7CP336F | DISTRIBUTOR | |
| M006 | TXFJIG01SER | EEPROM COPY JIG | |
| JK1001 | TJB2AA0471 | TERMINAL FRONT A/V | |
| JK3001 | TJB2AA0311 | TERMINAL REAR A/V | |
| JK5001 | DV2R024NKB | EDI CONNECTOR (DVI) | |
| JK5002 | TJB2AA0411 | TERMINAL VIDEO | |
| M007 | TMM2AE10171 | GROMMET SQUARE | |
| ACCESORIES | | | |
| M008 | TQB2AA0470-1 | OWNERS MANUAL | |
| M009 | EUR7603Z90 | REMOTE CONTROL / PT-53WX53G, PT-47WX53G, / PT-4743G, PT-56WX53G | |
| M010 | EUR7613Z40 | REMOTE CONTROL / PT-47WXC43G, PT-47WX33G | |
| M011 | UR76EC0303A | BATTERY COVER REMOTE CONTROL / PT-47WX53G, PT-4743G, / PT-56WX53G, PT-53WX53G | |
| M012 | UR76EC0303D | BATTERY COVER REMOTE CONTROL / PT-47WXC43G, PT-47WX33G | |